

# EAL BULL FROM ABOVE

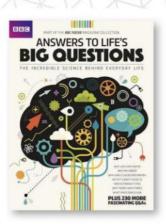
OUR PLANET AS YOU'VE NEVER SEEN IT BEFORE



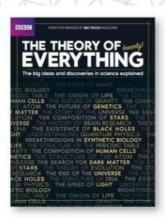
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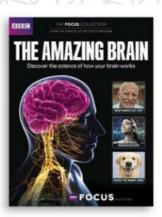




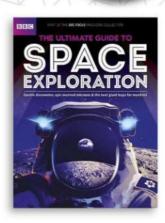
Discover the science behind everyday stuff – answers to brain-baffling scientific questions and conundrums about how life works.



This special issue explains the fundamental concepts of science, and reveals the latest cutting-edge research that will change our world.



Learn about the extraordinary abilities of the human brain, the latest research into mental health, and how we can make ourselves smarter in the future.



Take a trip through the cosmos to find out about the latest discoveries, epic manned missions and the next giant leaps for humankind.



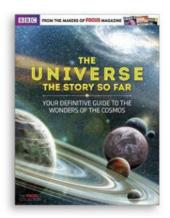
Inside: VR buyer's guide including headsets, cameras and more; the best free apps; and meet Palmer Luckey, founder of Oculus Rift.



Explore the current state of Earth, how we can protect it from global warming and natural disasters, and what would happen if we left to colonise another planet.



From acupuncture to yoga, argan oil to zinc, we ask scientists which techniques and treatments will help you live a happier, healthier life – and which you ought to avoid.



This special edition takes you on a journey from the pioneers who first described the Universe to the extraordinary missions exploring distant worlds today.

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Production Editor Jheni Osman
Commissioning Editor Jason Goodyer
Editorial Assistant James Lloyd
Additional copy Jordan Collver

#### **ART & PICTURES**

Art Editor Joe Eden
Designer Steve Boswell
Designer Jenny Price
Picture Editor James Cutmore

#### PRESS AND PUBLIC RELATIONS

Press Officer Carolyn Wray carolyn.wray@immediate.co.uk

#### **PRODUCTION**

Production Director Sarah Powell Production Co-ordinator Emily Mounter Reprographics Tony Hunt, Chris Sutch

#### **PUBLISHING**

Publisher Jemima Ransome Publishing Director Andy Healy Managing Director Andy Marshall Chairman Stephen Alexander Deputy Chairman Peter Phippen CFO Tom Burgau

#### BBC WORLDWIDE, UK PUBLISHING

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# Welcome



Whether you've travelled the world in person, or from an armchair via a good book or the remote control, you're unlikely to have ever seen Earth like in this special issue of BBC Focus magazine.

I challenge you not to be genuinely intrigued by bird's-eye views of human-

made icons such as the Pyramids of Giza, the Burj Khalifa or the Eiffel Tower, or not to marvel at the drone shots of bustling Manhattan or the make-believe world of Disneyland China, or satellite views of whole continents lit up at night.

It's through images such as these that we begin to understand the true magnitude of our engineering achievements, but also the impact of our species on the planet. However, when you see shots of the vast expanse of the Sahara Desert, the long chain of the Rocky Mountains and the sprawling wetlands of the Pantanal, it really hits home just how small and insignificant we human beings are compared to the immensity and majesty of the natural world.

Astronaut Jim Lovell summed it up well after he returned from orbiting the Moon in 1968: "The Moon is nothing but shades of grey and darkness. But the Earth – you could see the deep blues of the seas, the whites of the clouds, the salmon pink and brown of the land masses." At one point on Lovell's trip, the Earth was so far away that he could cover the whole globe with his thumb: "I realised how insignificant we all are if everything I'd ever known is behind my thumb."

So, if you're not lucky enough to be on a trip to the Moon or the next Tim Peake destined for the International Space Station, DSLR in hand, then over the next 90-plus pages sit back and enjoy this tour of Earth from above. From mountain ranges to metropolises, deserts to dockyards, rainforests to vintage car rallies, explore our planet continent by continent. Prepare to be amazed...

Daniel Bennett, Editor





from the air by the likes of drones and satellites...

#### EUROPE p6

Discover what's being done to save the city of **Venice**, which is sinking by 1mm every year.

#### MIDDLE EAST p24

Find out how **Bahrain** is building artificial islands in the Persian Gulf.

#### AFRICA p34

See the **Pyramids of Giza** in Egypt as you've never seen them before.

#### ASIA p46

Take a trip through the **Sundarbans** on the border of India and Bangladesh.











#### OCEANIA p66

Get a satellite view of **Ayers Rock** – and discover why climbing it is frowned upon.

#### ANTARCTICA p70

Find out what scientists believe is causing the **Wilkins Ice Shelf** to break apart.

#### NORTH AMERICA p72

Discover how the dry **Arizona** climate is the perfect place for stashing aircraft.

#### SOUTH AMERICA p90

Explore the **Itaipu Reservoir** and find out about the reforestation efforts.











# EUROPE Night glow From a window on the International Space Station an astronaut captures all 582,000km² of the Iberian Peninsula, which is made up of Spain, Portugal, Gibraltar and Andorra. Although it may look like the Northern Lights (aurora borealis) hovering above Europe, the green shell of otherworldly light is actually 'airglow' (also known as 'nightglow') - a photochemical reaction that occurs when ultraviolet radiation from the Sun excites atoms in the upper atmosphere. PHOTO: NASA

ICELAND

#### Lava temple

A drone hovers above the tessellated spire of Hallgrímskirkja Church in Reykjavík – a design inspired by the interesting shapes formed from cooling lava. Below Earth's surface lava is known as magma. Iceland sits atop a pocket of magma. Steam rising off the magma can be used to spin a turbine, generating electricity. Geothermal energy supplies 25 per cent of Iceland's power, with the remaining 75 per cent coming from other forms of renewable energy.

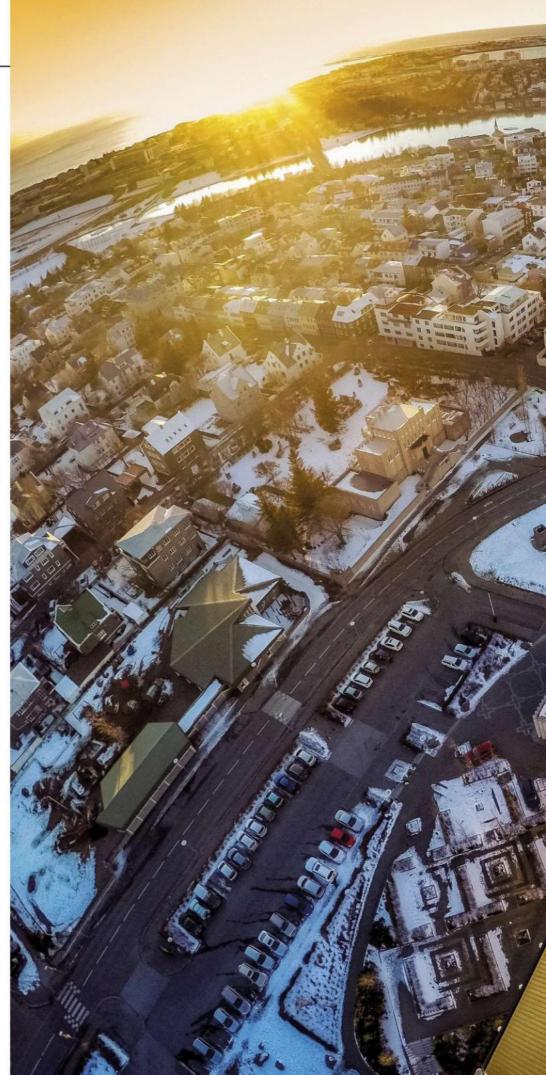
PHOTO: ALAMY

DID YOU KNOW

# 2.5cm

The distance that the tectonic plates below Iceland pull apart at the Mid-Atlantic Ridge every year.









FRANCE

#### Parisian icon

The Eiffel Tower casts a long shadow over the River Seine, transforming Paris into a city-sized sundial. At 300m, it was the world's tallest structure when it opened in 1889. It was built using 7,300 tons of iron and 2.5 million rivets. To protect it from the elements, it is painted roughly once every seven years with 60 tons of paint.

PHOTO: GETTY/DIGITAL GLOBE

#### Ville des lumières

'The City of Lights' lives up to its name in this photo snapped from onboard the International Space Station. After the Opéra Comique burnt down in 1887, Paris decided to replace all its public gas lights with electric ones. By the turn of the century, its streets were illuminated by over 50,000 electric lamps.

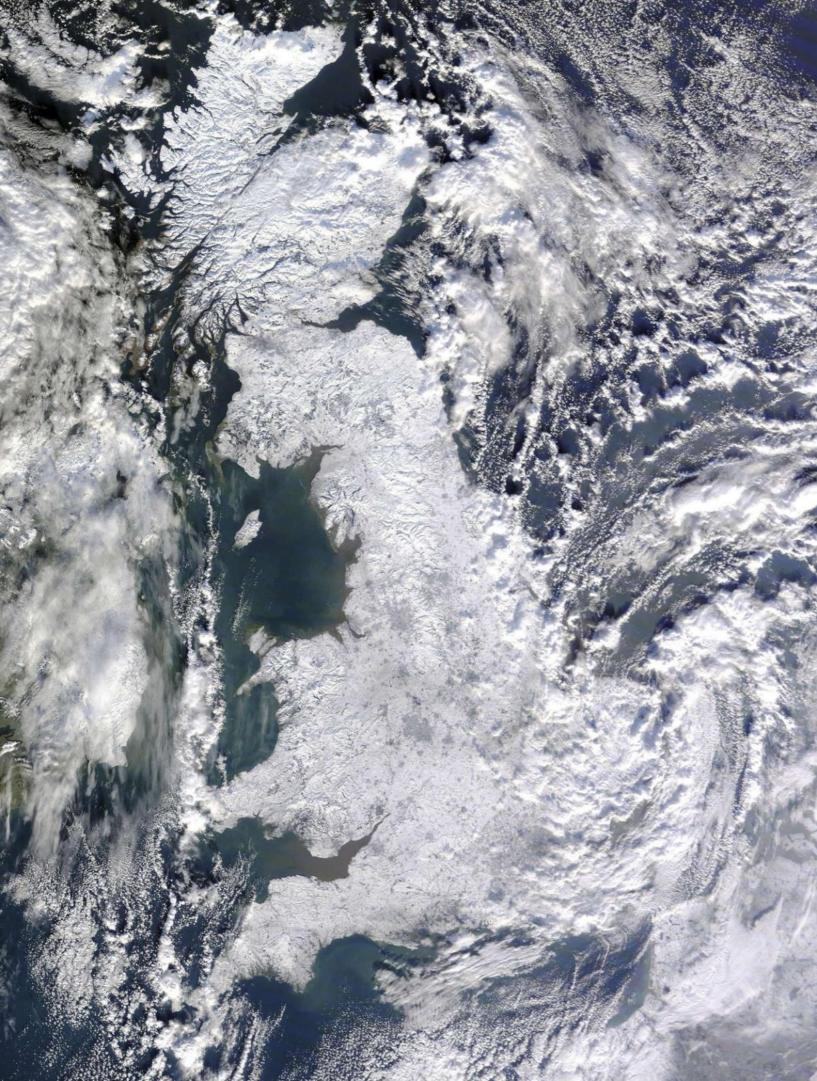
PHOTO: NASA













UK

## Cold snap

The UK came to a halt on 7 January 2010 when temperatures reached a nippy -18°C and snow covered the majority of the country. The cold snap started in November, with December being the coldest ever for that month for 100 years. The lowest ever temperature in the UK was -27.2°C, which was recorded on both 10 January 1982 and 30 December 1995 in East Scotland and North Scotland respectively.

PHOTO: NASA / JEFF SCHMALTZ

FRANCE

### Vintage rally

A drone captures a sea of classic cars gathered for the 19th Rallye Monte Carlo Historique in Monaco on the French Riviera. Only vehicles that competed in the Monte Carlo Rally between 1955 and 1980 are eligible for the event, racing from various start towns across Europe to the finish line in Monaco. The first rally was in 1911 when only 16 out of 23 cars completed the race.

PHOTO: GETTY





DID YOU KNOW

In the 1966 rally, Mini Coopers claimed the top three places before being disqualified for illegal headlights.

UK

# Powering the UK

Speckled across the Thames Estuary stand the 175 wind turbines of the London Array, which covers an area of over  $100 \, \mathrm{km^2}$ . Since 2013, the world's largest wind farm has generated enough energy to power an estimated 1.2 million UK homes for a year, preventing some two million tonnes of  $\mathrm{CO_2}$  from being released into the atmosphere. Each turbine has been engineered to run continuously for over 20 years.

PHOTO: PLANET LABS INC







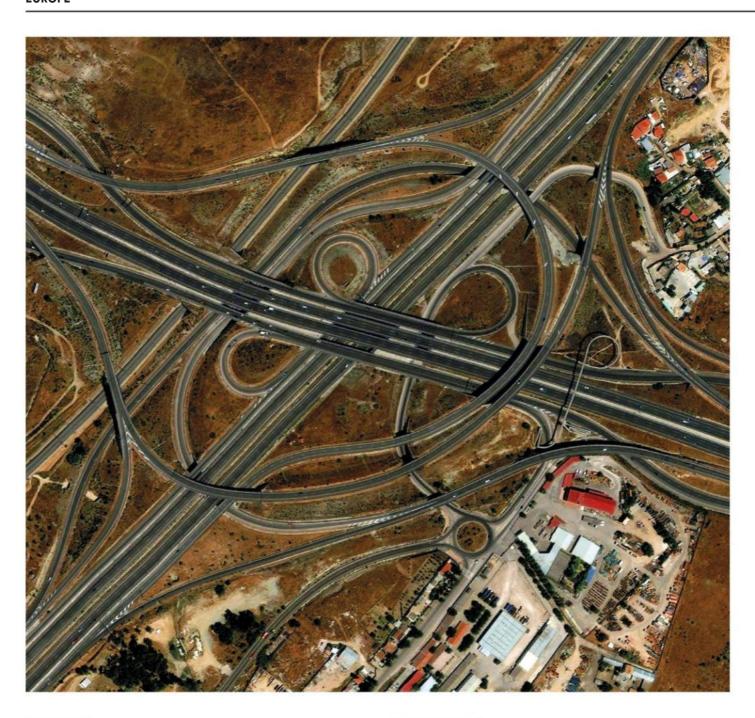
ITALY

## Colossal arena

The Colosseum in Rome was the largest amphitheatre in the ancient world. This view shows the remains of the hypogeum — a network of chambers beneath the central arena. It housed slaves, stage props and wild animals, which were released into the arena via trap doors, operated by a complex system of pulleys and ramps. Until being excavated in the 1930s, the hypogeum was buried beneath more than 12m of rubble and soil that had built up since the collapse of the Roman Empire.

PHOTO: GETTY/DIGITAL GLOBE





SPAIN

#### Motorway maze

The A-3 and M-50 motorways converge in an ornate knot on the outskirts of Madrid, Spain. The system was built to accommodate commuters travelling to and from Rivas-Vaciamadrid, one of the most populous areas outside the city centre. Similar 'spaghetti junctions' exist in cities around the world, the term originating from Birmingham's Gravelly Hill Interchange on the M6.

PHOTO: GETTY/DIGITAL GLOBE





GERMANY

## Wind power

Components of a wind turbine are assembled like a model rocket kit in the fields of Jacobsdorf in eastern Germany. The country is installing more wind farms as it phases out its 17 nuclear reactors and its dependence on coal power. Around a third of the country's energy needs currently come from renewables, and it aims to cut carbon emissions by 40 per cent by 2020.

PHOTO: GETTY











SPAIN

#### Plastic harvest

A patchwork of plastic greenhouses covers more than 450km² outside the city of Almeria in Spain. With the highest density of greenhouses in the world, this unconventional oasis makes it possible to cultivate land otherwise unsuitable for crops, and provides more than half of Europe's fruits and vegetables all year round.

PHOTO: GETTY/DIGITAL GLOBE



ITALY

## A new day dawns

Daybreak highlights the curvature of the Earth, as Italy slumbers in the foreground. Sicily lies at the bottom of the image, where Mount Etna's fiery glow can just be seen surrounded by a circle of darkness. The volcano is one of the most active on the planet, with around 200 eruptions dating back as far as 1500BC.

PHOTO: NASA



SPAIN

# Architectural vision

The Avinguda Diagonal strikes a path across the grid of Barcelona's L'Eixample region, like a bishop slicing across a chessboard.

Designed by city planner Ildefons Cerdà in the mid-1800s, each square is a cocktail of Spanish architecture with missing corners to leave room for wide-turning tram lines that were never built.

PHOTO: GETTY/DIGITAL GLOBE

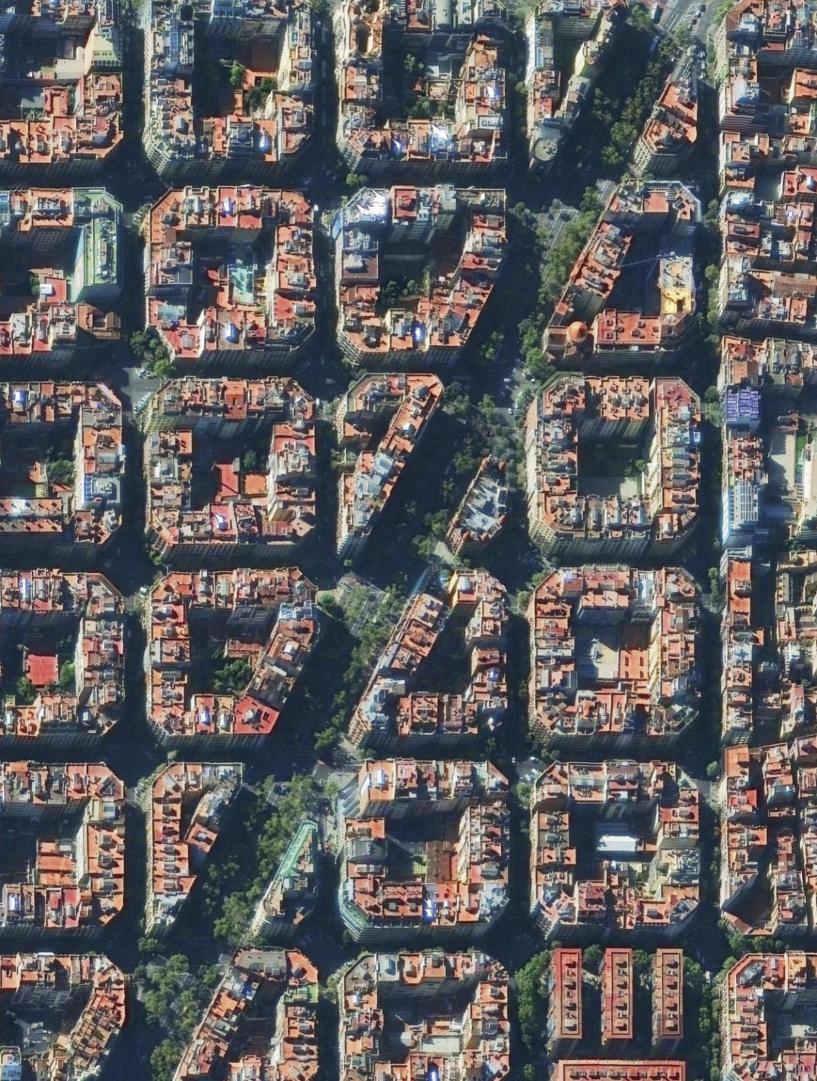
DID YOU KNOW

7.5 M The number of people that visit Barcelona every year.

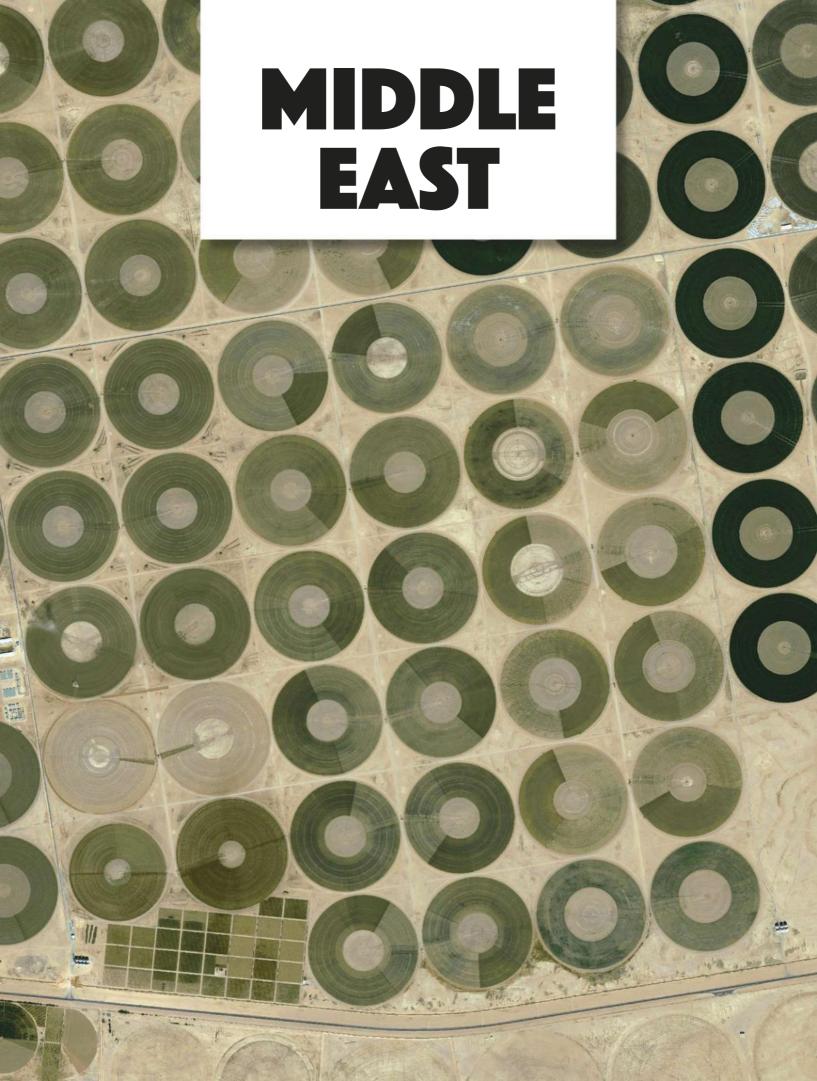


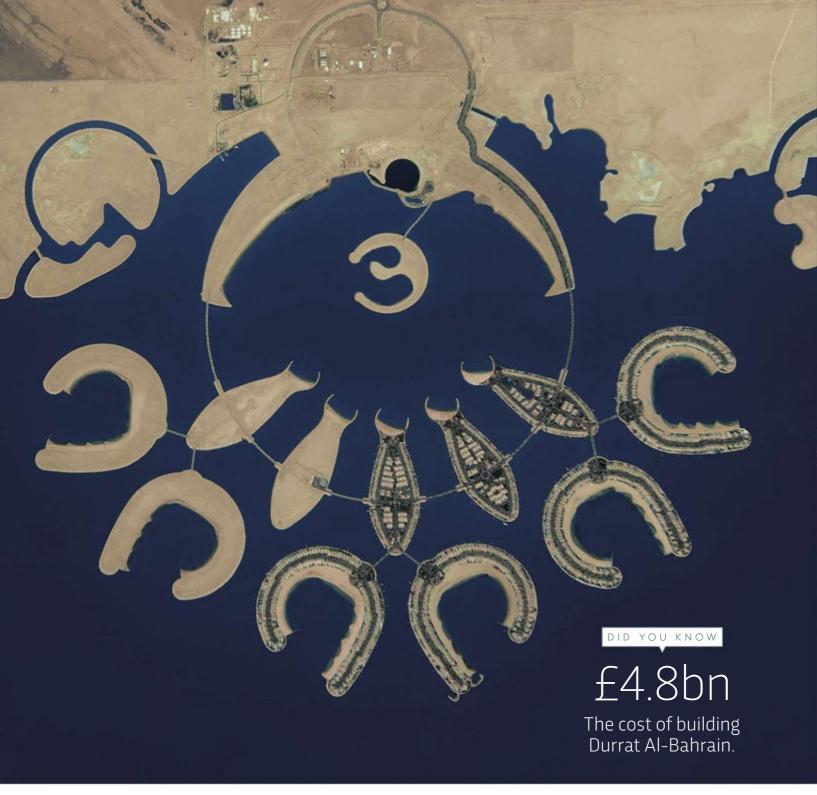












BAHRAIN

# The pearls of Bahrain

Shaped like an ornate necklace, the Durrat Al-Bahrain islands are an artificial archipelago, whose name translates as 'the most perfect pearl'. To create the  $20 \mathrm{km}^2$  of new land off the south-east coast of Bahrain, 34 million cubic metres of material was dredged from the seafloor of the Persian Gulf. The islands are like mini towns with luxury homes, shopping malls and schools.

PHOTO: GETTY/DIGITAL GLOBE





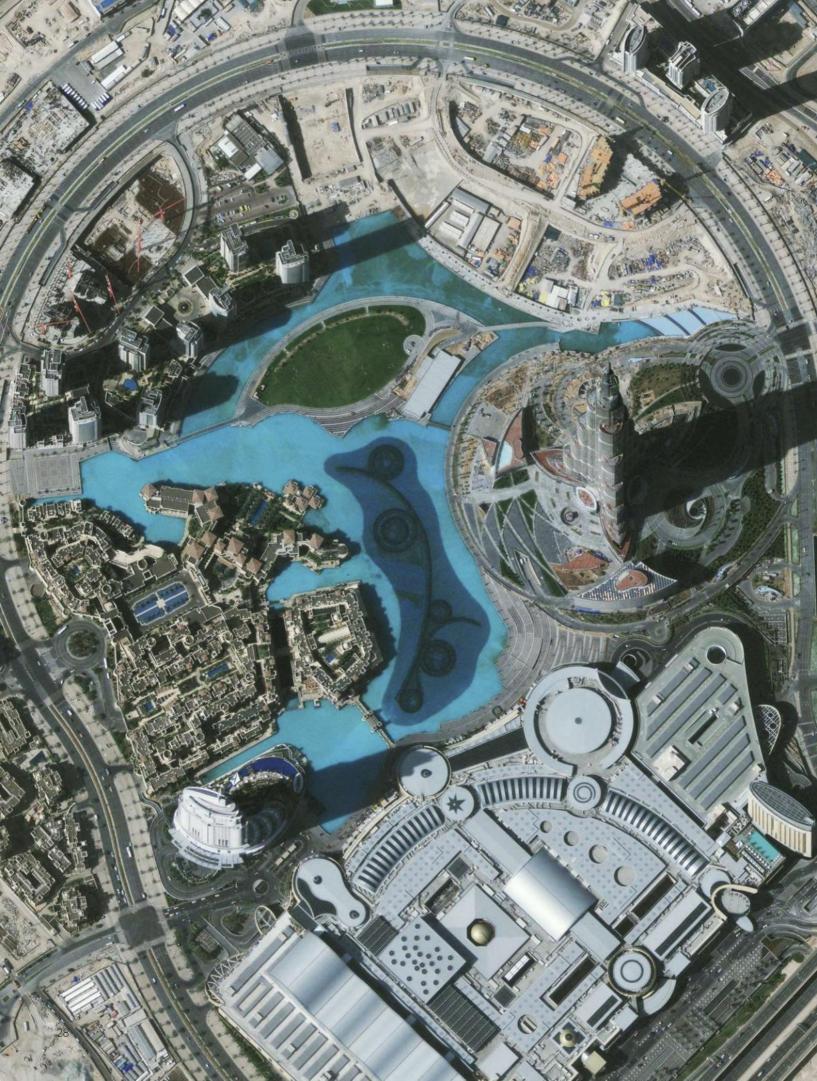
#### MIDDLE EAST

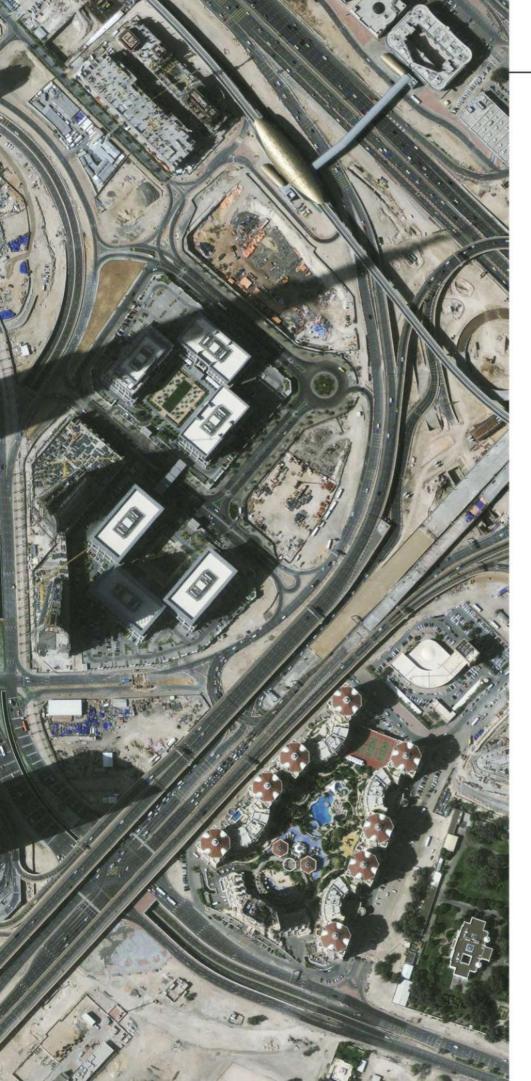
# Bright lights

Captured by the International Space Station, this night-time view showcases the inhabited areas that have built-up around the Mediterranean over the centuries. Running down the Med's east coast lies Beirut, Haifa, Tel Aviv and the Gaza Strip. Set back from the south coast is Cairo, with the Nile snaking down into East Africa.

PHOTO: NASA







UAE

## Superscraper

Standing at over 828m tall, the Burj Khalifa is the highest building in the world. It took over five years to construct and cost \$1.5bn. It holds many world records, including the world's highest nightclub on the 144th floor.

PHOTO: GETTY/DIGITAL GLOBE

DID YOU KNOW

# 36km/h The speed of the elevators in the

Burj Khalifa.









IRAN

#### Swirling desert

Without topsoil or plant life, marbled light and dark bands of rock are clearly evident in this image of central Iran's Great Salt Desert (Dasht-e Kavir). While much of the area appears to be bone dry, it was once a prehistoric ocean. Over time, the water evaporated and layers of salt beneath the surface have slowly risen through soft, overlying rock to form domes called diapirs, such as the eye-like feature staring out from the centre of the image.

PHOTO: NASA

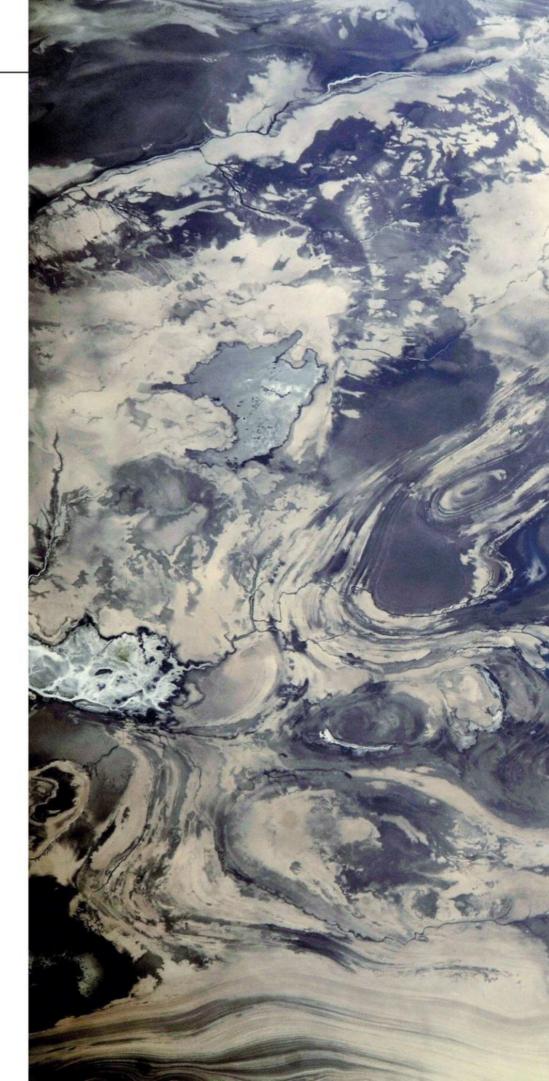


7000

The difference in day and night temperatures during a year.



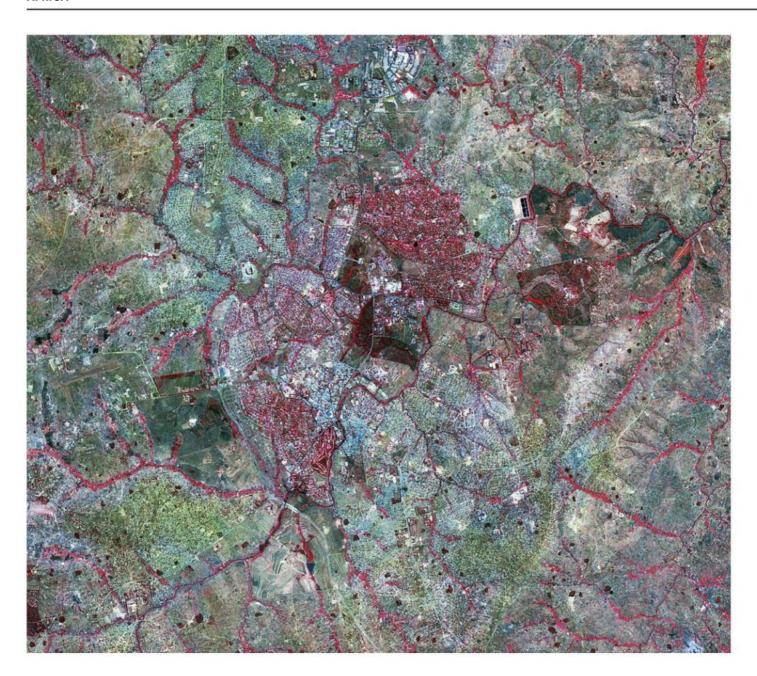










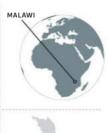


MALAWI

#### Urban boom

The population in Malawi's capital, Lilongwe, has grown substantially in the last half century. In 1966 it was around 19,000. Today, it is almost a million. NASA's satellite ASTER took this image. The rich red colouration is due to its camera capturing data from visible to thermal infrared wavelengths.

PHOTO: NASA/ASTER





NAMIBIA

#### Sand castles

The Namib Desert's rolling red-orange sand dunes are some of the world's tallest at over 300m high. Despite its scorching temperatures, which can reach up to 50°C, it supports diverse wildlife. One animal unique to the area is the desert elephant, mainly found in Namibia's Damaraland region, which can go for days without drinking water and has larger feet making it easier to walk through sand.

PHOTO: GETTY/DIGITAL GLOBE





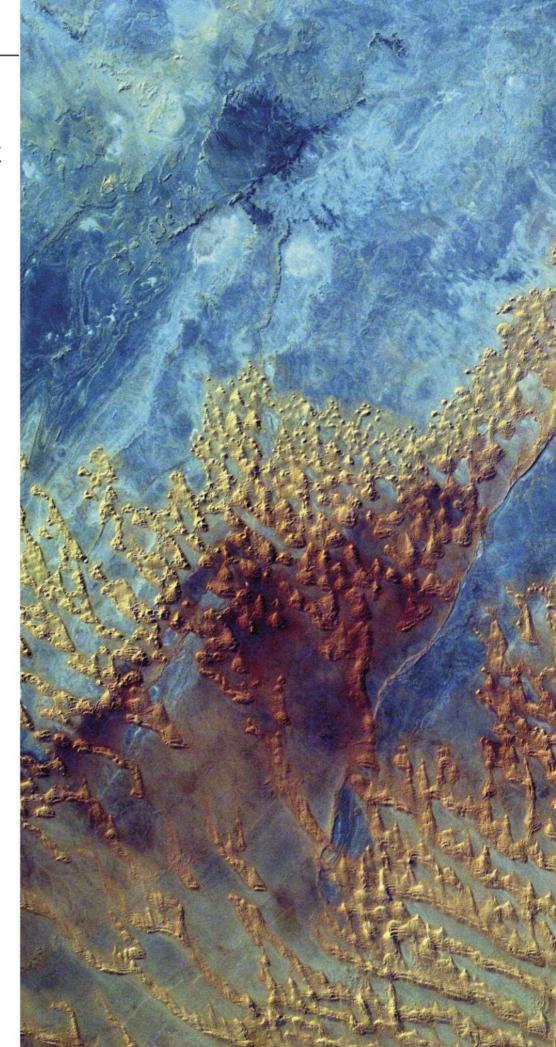


LIBYA

## The great desert

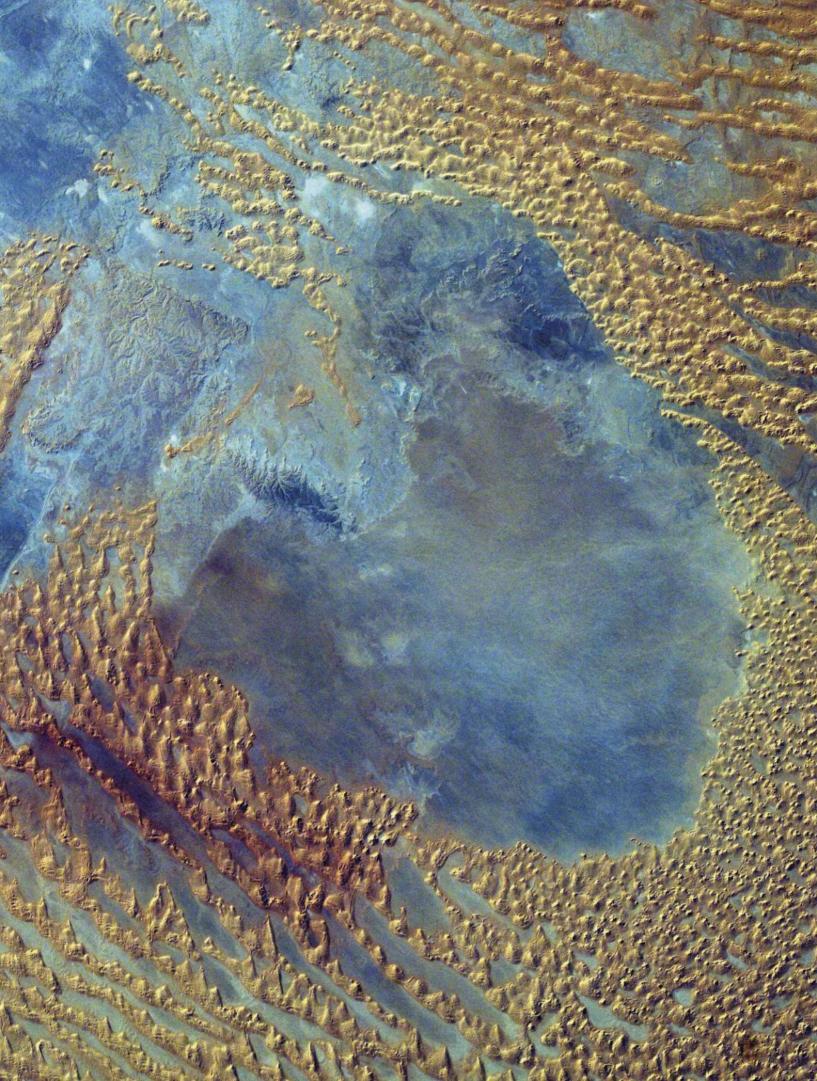
This shot of part of the Sahara in Western Libya was captured by EarthKAM – a NASA programme where students from all over the world can ask for images to be taken from the International Space Station of specific locations on Earth. The Sahara is the largest hot desert in the world, with northeasterly winds that can reach hurricane levels, and as little as 2.5cm of rain on average each year.

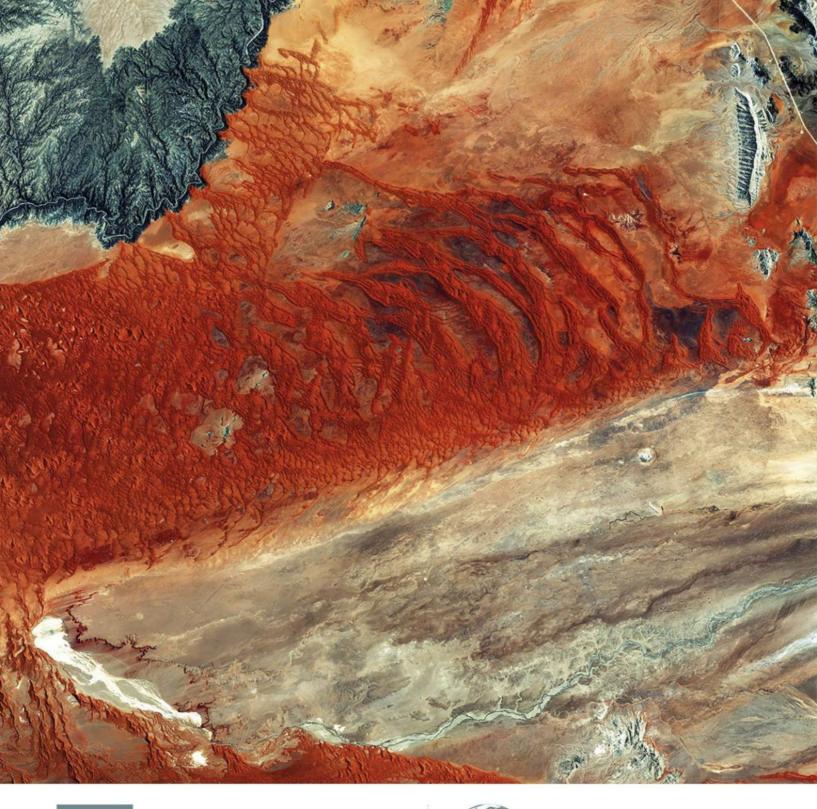
PHOTO: NASA











NAMIBIA

## The land of extremes

The rich red-orange sand dunes of the Namib Desert stretch inland towards the Naukluft Mountains. Most moisture from the Atlantic falls as rain near the coast, yet some rolls across the arid desert as fog, quenching wildlife and oxidising the iron in the sand dunes to create their red colour. Highland water flows down the Kuiseb River greening the land to the north. In the south, as the Tsondab River hits the desert, water evaporates, leaving behind white salt and mineral deposits.

NAMIBIA

ANGOLA

Namib

Namib

Desert

SOUTH

AFRICA

PHOTO: ESA



EGYPT

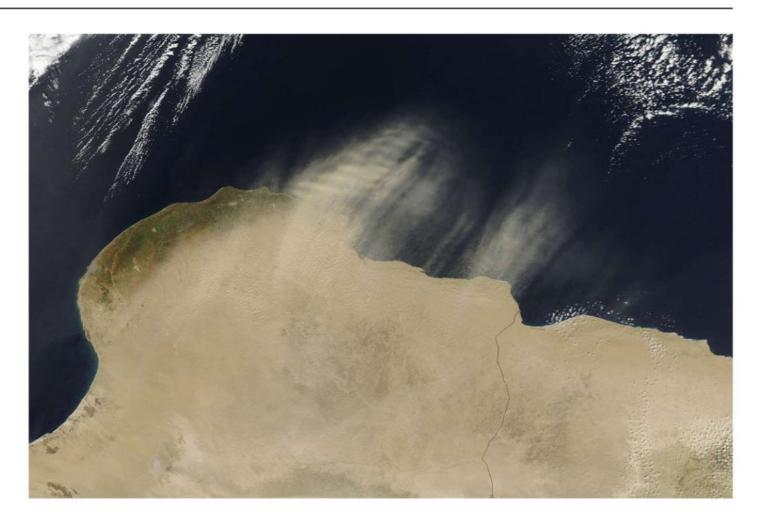
## Pharoah tombs

Three huge pyramids and the Great Sphinx make up the Giza Necropolis. The Great Pyramid (top) is the oldest of the Seven Wonders of the Ancient World. Built around 2580-2560BC, it was also the world's tallest human-made structure for over 3,800 years.

PHOTO: GETTY/DIGITAL GLOBE





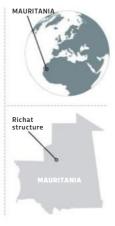


MAURITANIA

## Desert eye

The 40km-wide Richat structure is a giant geological wonder in the Sahara Desert. Since early space missions it's been a familiar sight to astronauts. Initially, it was thought to have been the product of a meteor impact, but geologists now think it formed when a large dome of molten rock lifted up, followed by centuries of weathering to create the roughened landscape.

PHOTO: ESA



LIBYA

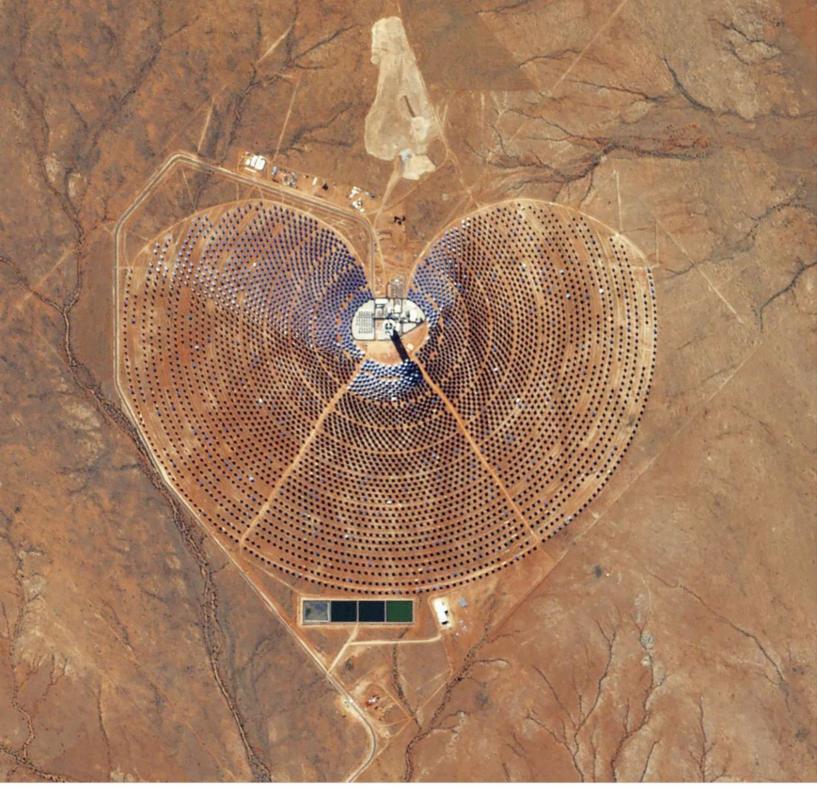
#### Dust storm

Rich with minerals, these Saharan dust plumes will land in the Mediterranean – feeding microscopic organisms, known as phytoplankton, which sit at the bottom of the food chain.

PHOTO: NASA / JEFF SCHMALTZ





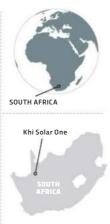


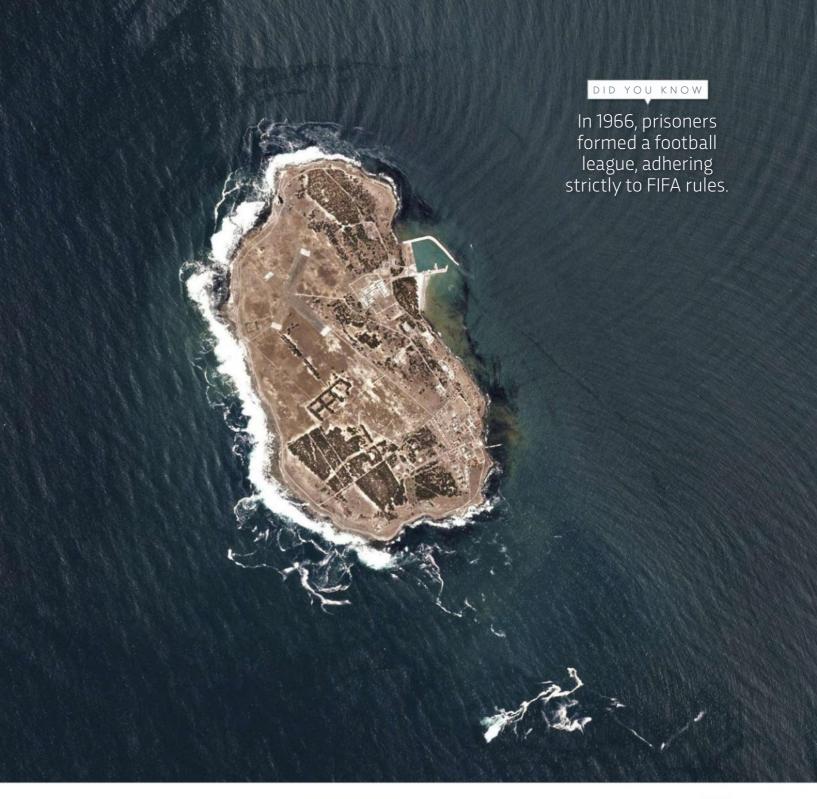
SOUTH AFRICA

## At the heart of green energy

Over 4,000 mirrors direct sunlight to a boiler in a central tower at the Khi Solar One power plant in the Northern Cape, South Africa. At full capacity the boiler heats up to a toasty  $530^{\circ}$ C. The plant began commercial operation in February 2016, and supplies energy to around 45,000 homes.

PHOTO: PLANET LABS INC



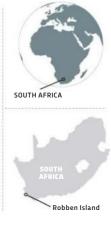


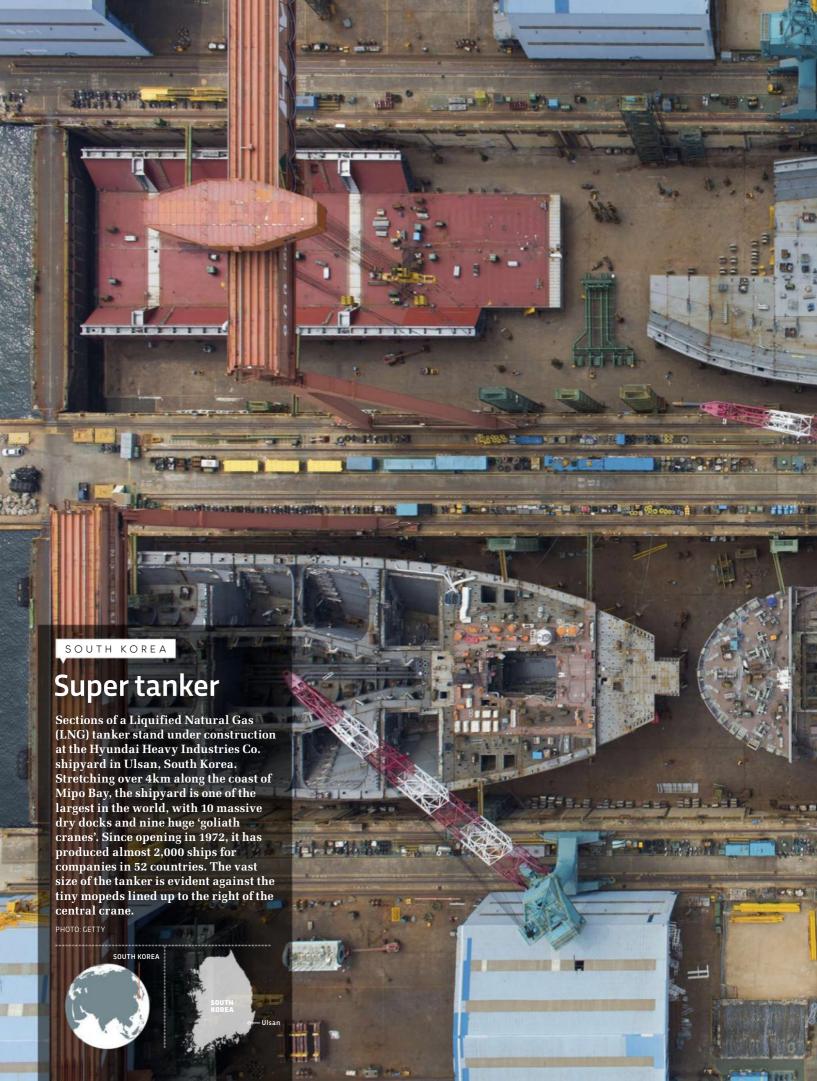
SOUTH AFRICA

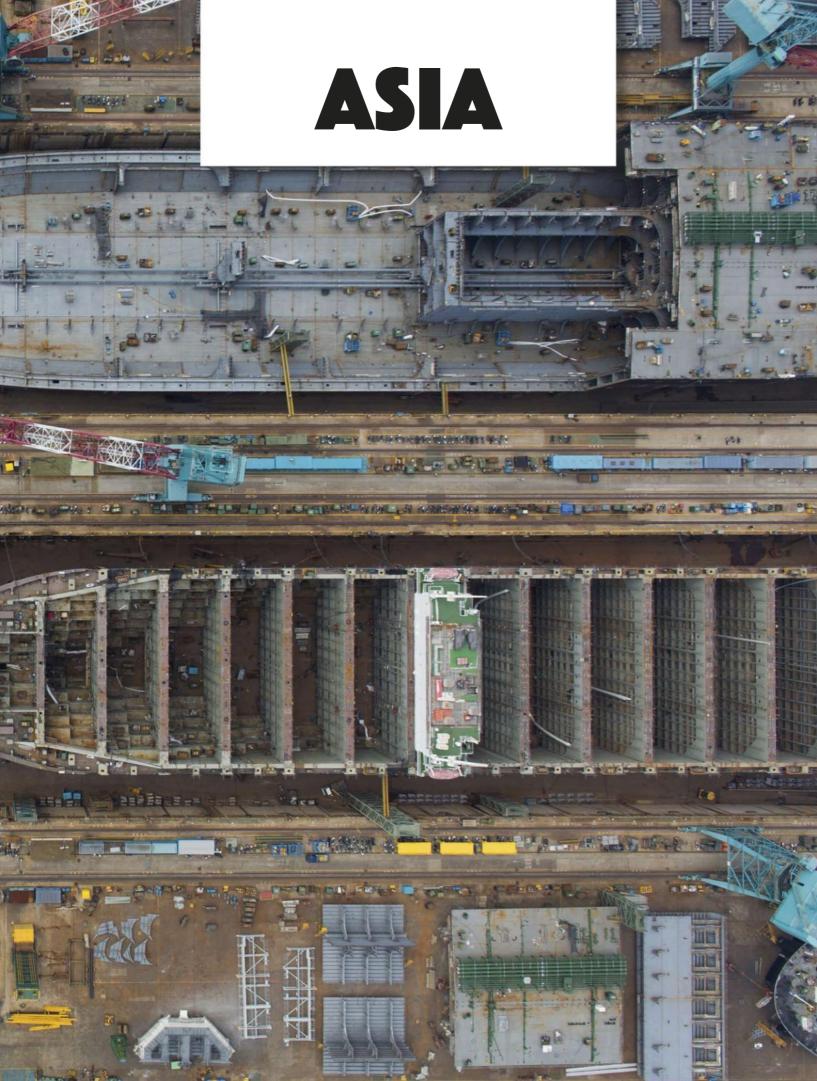
## The prison

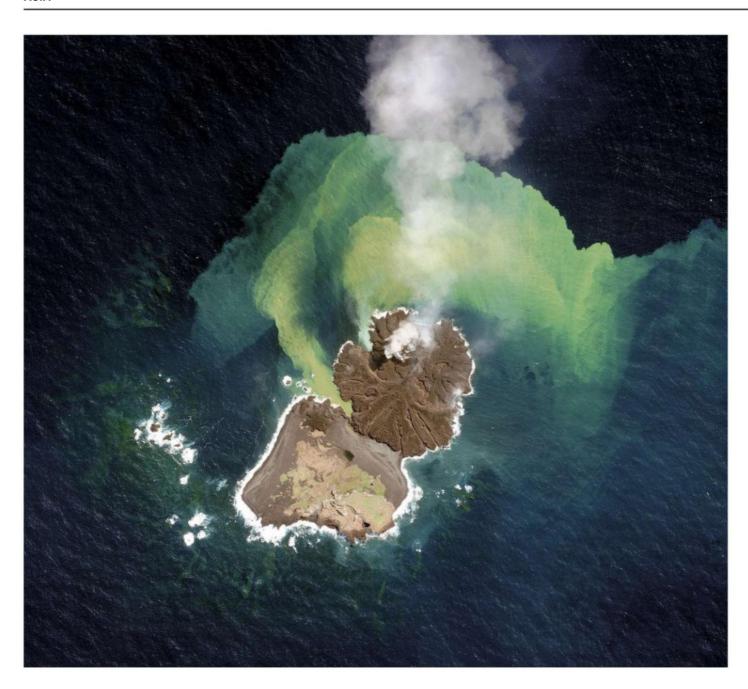
About 7km off the coast of Cape Town lies Robben Island. Now a World Heritage Site, it was once an infamous prison, where former South African President Nelson Mandela was incarcerated for 18 of the 27 years he served behind bars. Just inland from the harbour on the east coast is the Maximum Security Prison, where the B Section housed influential leadership figures. Guards, other workers and their families lived in the settlement on the south-east of the island.

PHOTO: PLANET LABS INC









JAPAN

#### Island birth

The world's youngest island, Nishinoshima, is made up of two sections which formed over 60 years apart. The lower section was created in 1973 when an underwater volcano erupted, while the upper part first broke through the ocean's surface in November 2013, merging with its neighbour soon after. Every day, the island produces 80 Olympic-sized swimming pools worth of lava.

PHOTO: GETTY



RUSSIA

#### Patchwork farms

A grid of vast fields stretches across the Russian plains at the feet of the Caucasus Mountains, near Stavropol Krai. The region's temperate climate makes it ideal for growing grape and grain crops, which are fed by water trickling down from the mountains.

PHOTO: PLANET LABS INC





SOUTH KOREA

## Mega car park

Rows and rows of brand new cars sit awaiting delivery at the Hyundai factory in Asan, South Korea. The 1.78km² site produces up to 260,000 vehicles every year.

PHOTO: GETTY

DID YOU KNOW

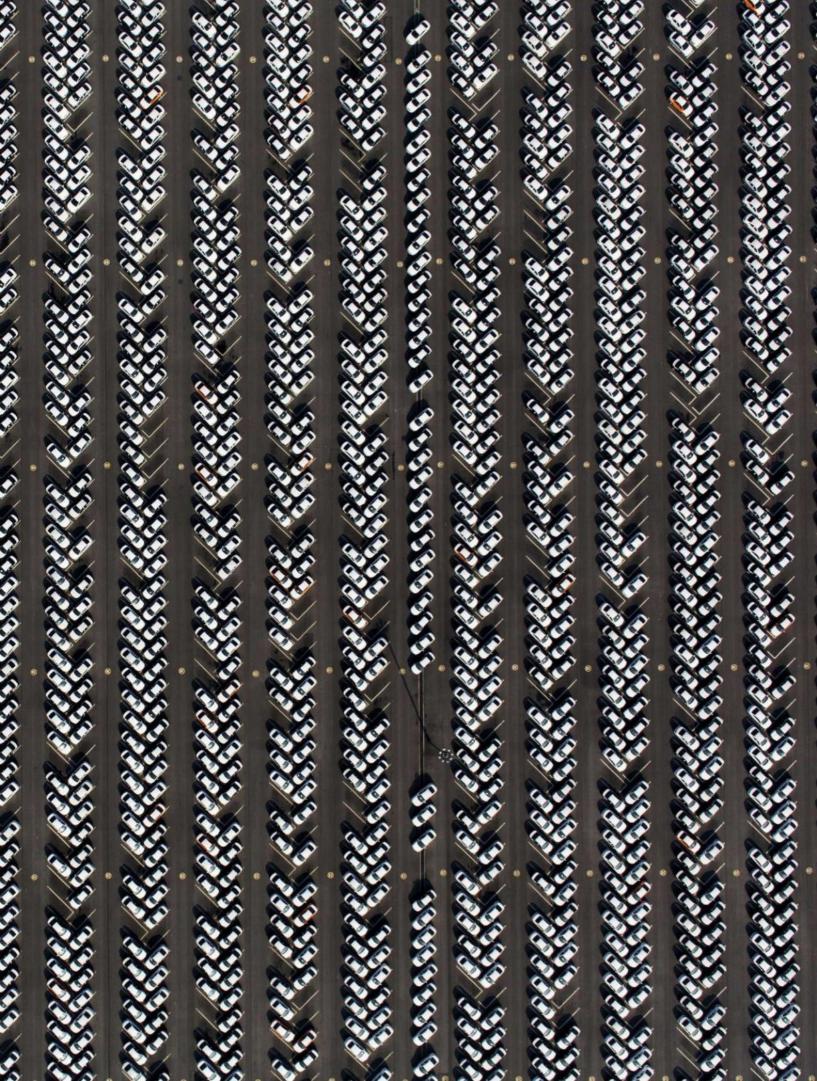
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The number of

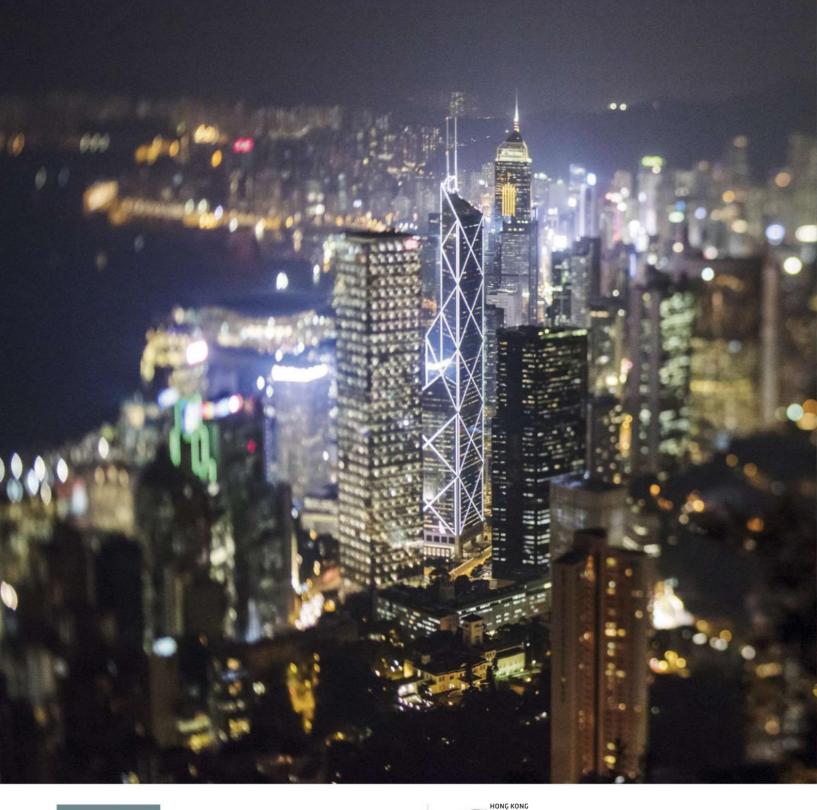
The number of vehicles produced in South Korea in 2016, making it the world's sixth largest producer.











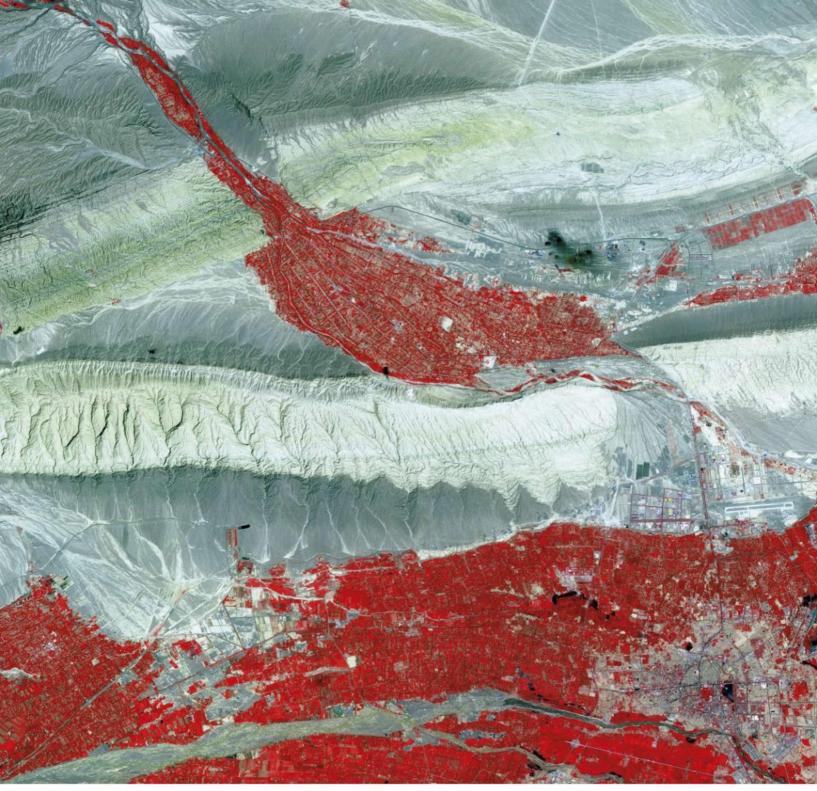
HONG KONG

## The meat cleaver

The iconic diamond-patterned facade of the Bank of China Tower reaches for the stars among the glitzy lights of Hong Kong's central business district. At 367m high, it is the city's fourth tallest skyscraper. The tower has been nicknamed 'One Knife', as some people think its profile from certain angles resembles a meat cleaver. Using a tilt-shift lens, the photographer was able to keep the building in sharp focus and blur the surroundings.



PHOTO: GETTY



CHINA

# Silk Road stop off

The ancient city of Kashgar (bottom right) was once a major trading post on the Silk Road. Tucked away in a remote western corner of China, much closer to Delhi and Kabul than Beijing, much of the old city is being bulldozed to make way for modern life. NASA's satellite ASTER took this image. The rich red colouration is due to its camera capturing data from visible to thermal infrared wavelengths.

PHOTO: NASA



#### NEPAL / TIBET

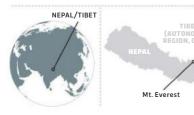
# The route to the top of the world

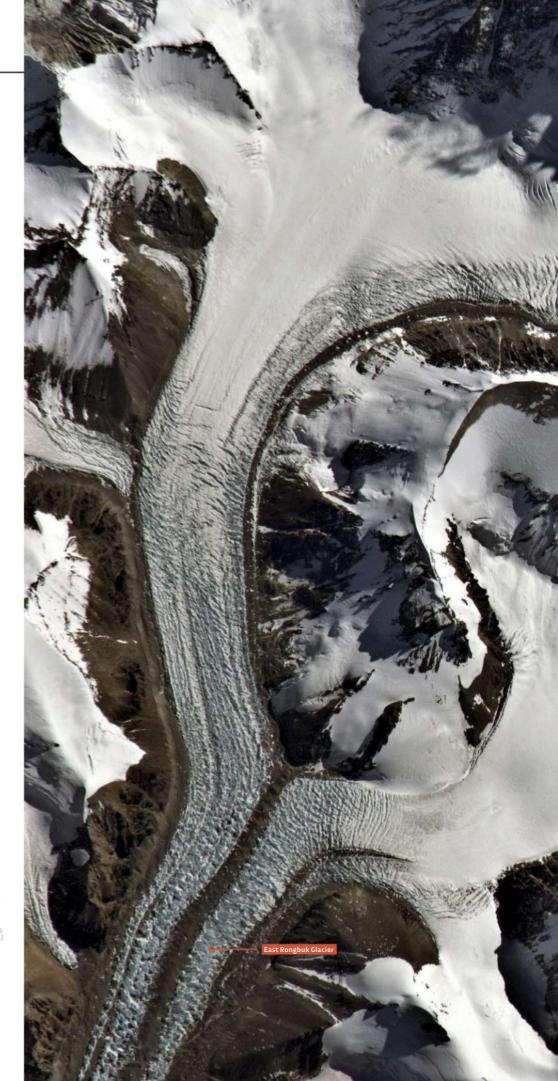
With over 100 mountains exceeding 7,200m, the Himalayas are the world's highest mountain range. Topping them all is Mount Everest, at a staggering 8,848m tall. If approaching from Tibet, climbers travel along the East Rongbuk Glacier to Advanced Base Camp, before ascending the North Col, reaching progressively higher camps along the North Face, before making the final push to the summit.

PHOTOS: NASA

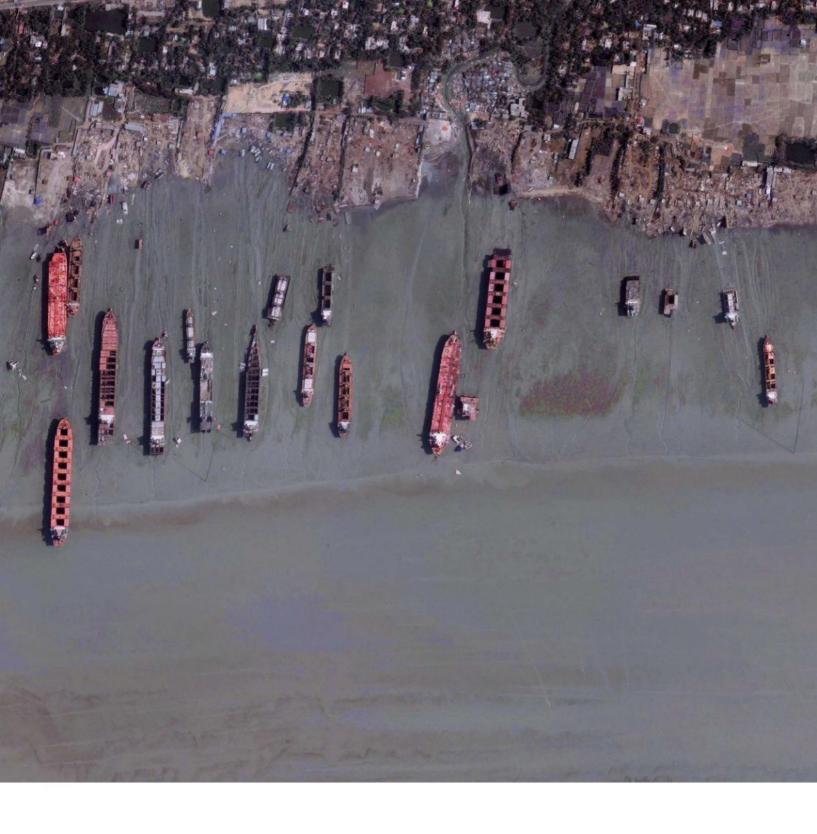
DID YOU KNOW

1,600
The number of stacked London buses equal to the height of Mt. Everest.











BANGLADESH

## Ship graveyard

On this stretch of Bangladesh coastline, just north of the town of Chittagong, ships from around the world come to die. Bangladesh recycles more ships than any other country in terms of tonnage. Once a ship is beached, fuel and other liquids are siphoned off and sold, then all machinery is stripped out and sold to salvage merchants. The ship's hull is then sliced apart and melted down to be re-used in construction. But, unlike in the developed world, the process is not strictly regulated, so environmental damage and lethal accidents are common.









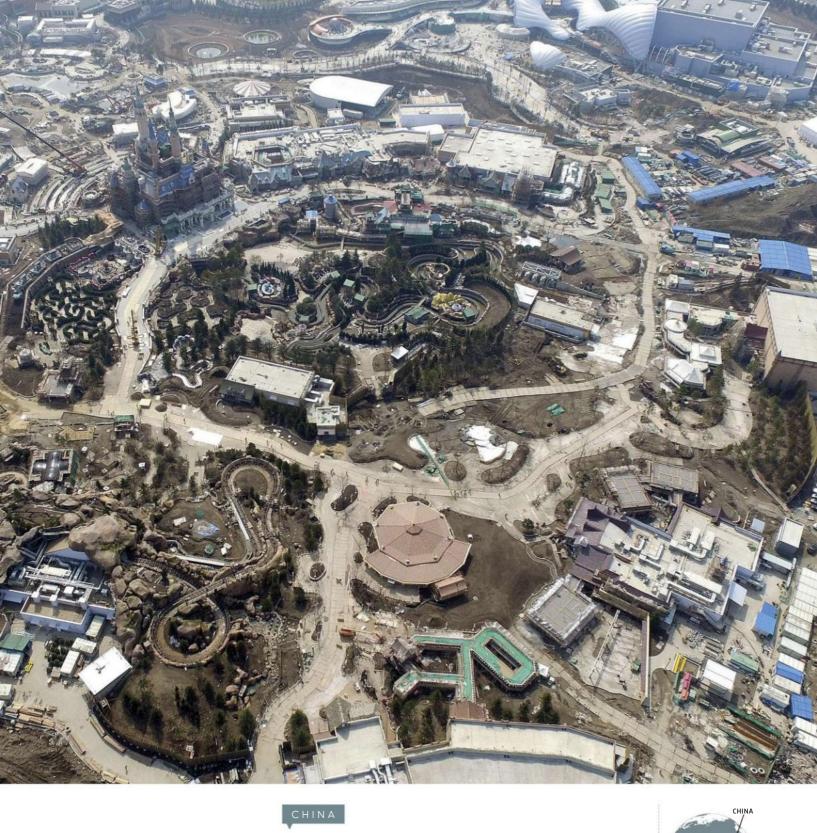
CASPIAN SEA

# Drilling for black gold

Shallow waters, high hydrogen sulphide levels, and temperatures plummeting from 40°C in summer to -35°C in winter, made developing the Kashagan Field oil facility in the Caspian Sea a real challenge. Discovered in 2000, and named after a 19th-Century Kazakh poet, its construction was plagued by delays, and cost around \$50bn to build. Production started last year, with crude oil piped out through the Caspian Pipeline that links to the Black Sea.







# Casting a spell

A drone captured this intriguing image of Disneyland under construction in Shanghai, China. Costing £3.8bn in total, and five years in the making, it is the sixth Disneyland resort to be built around the world. Since opening in June 2016, around 20,000 people visit per day. Just left and above centre sits the Enchanted Storybook Castle, while top right is Tomorrowland, housing the TRON Lightcycle Power Run, the Star Wars Launch Bay, Buzz Lightyear Planet Rescue and the Stitch Encounter.



PHOTO: GETTY





BANGLADESH

### Salt lands

Rivers and tributaries snake across the land, hunting for a route to the coast. This image shows part of the Sundarbans, which bridges the border of Bangladesh and the western Indian state of Bengal, an area of 10,000km² – about the size of 170,000 football pitches. The Sundarbans is one of the largest mangrove forests in the world, where few other plants can survive the harsh salty conditions. The lighter green land is where the forest has been cleared for agriculture and human settlement.

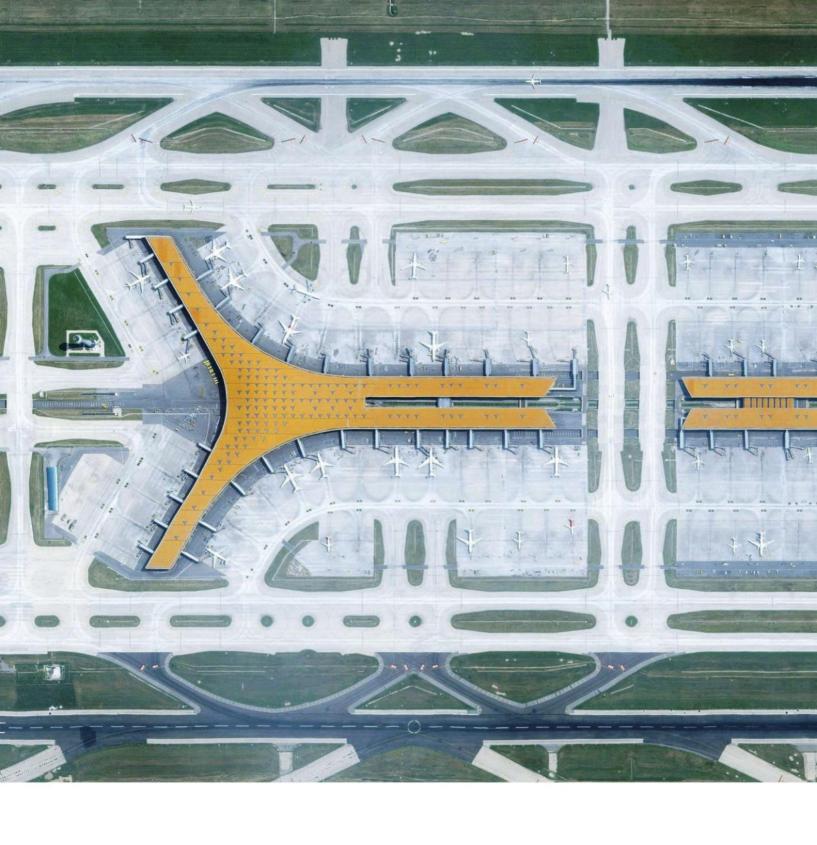
PHOTO: ESA

DID YOU KNOW

The Sundarbans is one of the largest reserves for the Bengal tiger.









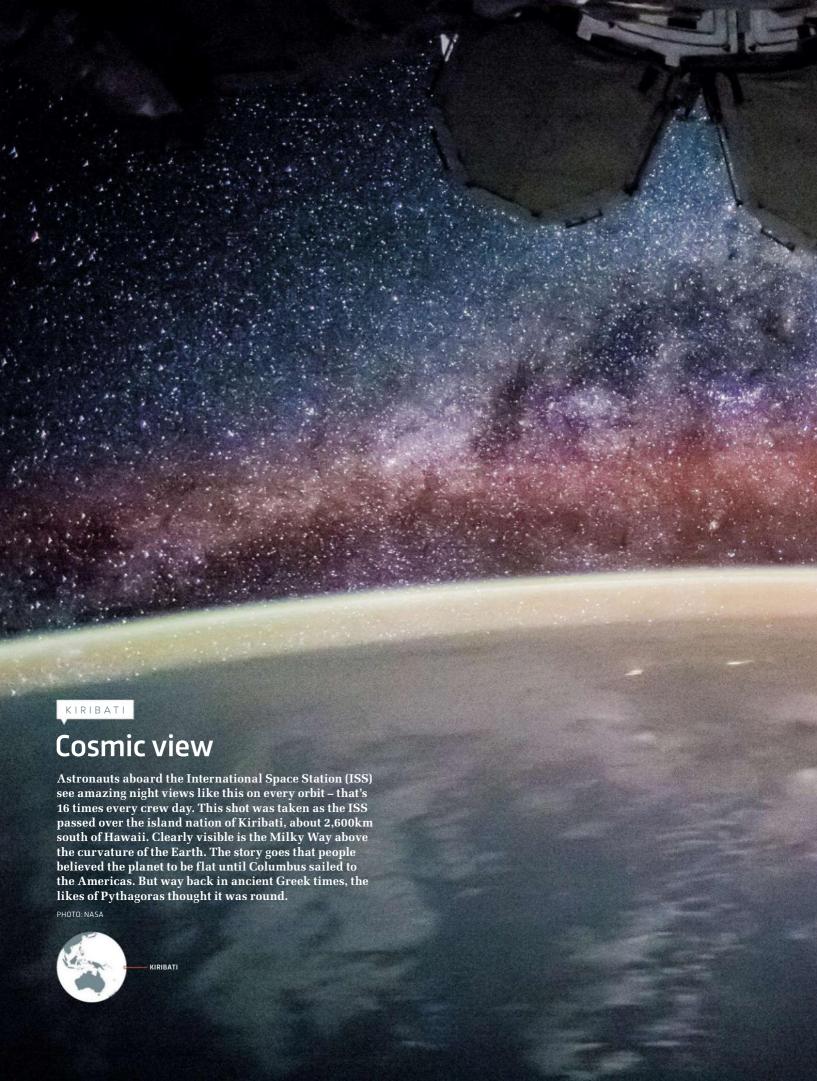
CHINA

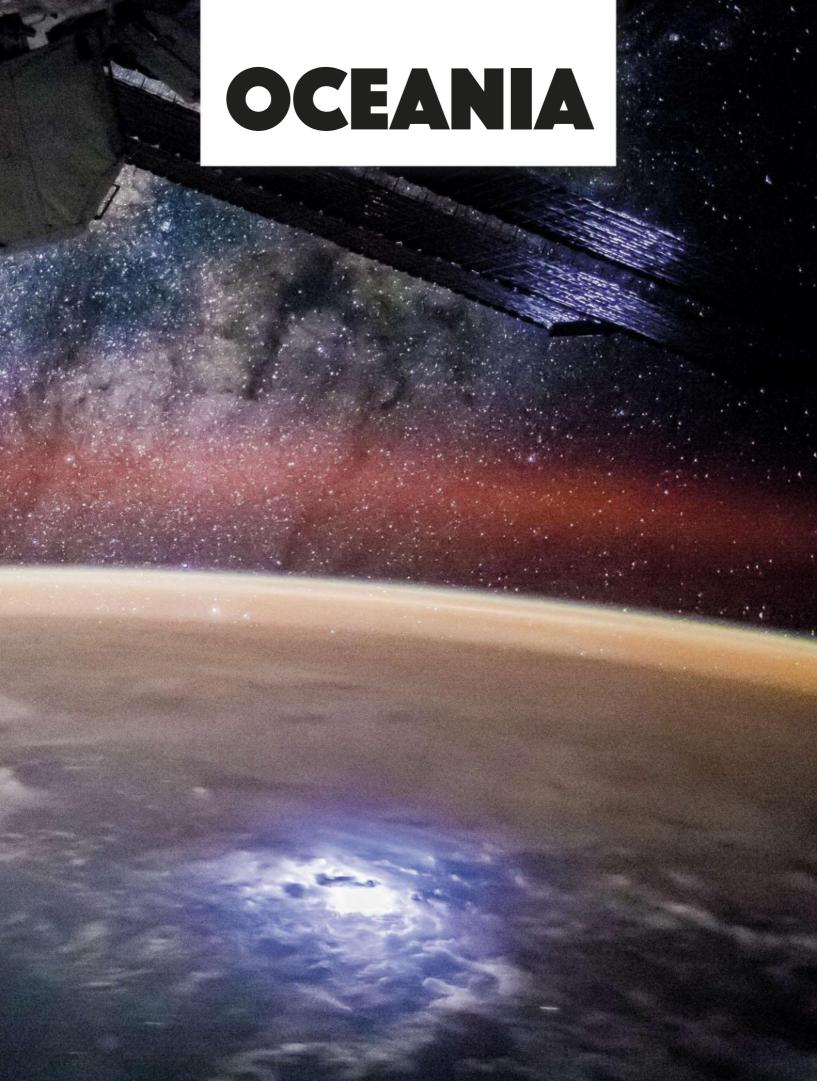
## Crowded skies

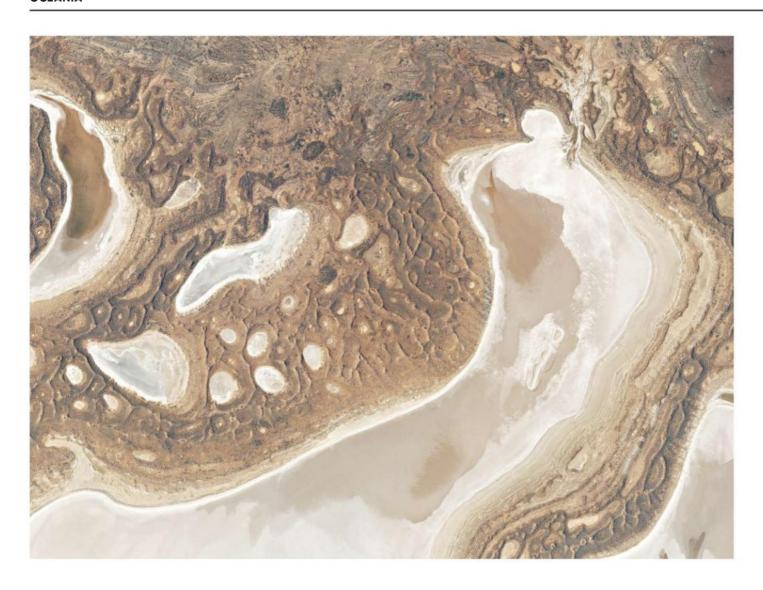
The stylish international terminal at Beijing Airport, designed by architects Foster + Partners, belies the turmoil that circles the surrounding skies. With commercial airlines allowed to use less than 30 per cent of China's airspace (the military controls the rest), the country's airports are some of the worst in the world when it comes to punctuality. In 2015, only 64 per cent of flights at Beijing airport were on time. At major US and European airports flights land on average every 30 seconds, but in China it can stretch to three times that. So a major new terminal is being planned that will accommodate 45 million passengers a year.



PHOTO: GETTY/DIGITAL GLOBE







#### AUSTRALIA

## Bone dry

Lake Carnegie is one of several 'ephemeral' lakes in the Australian outback. At around  $5,700 \, \mathrm{km^2}$ , it is one of the country's largest lakes. Usually dry, it fills up during monsoon season, only to dry up again in the hot summer months and periods of drought.

PHOTO: PLANET LABS INC

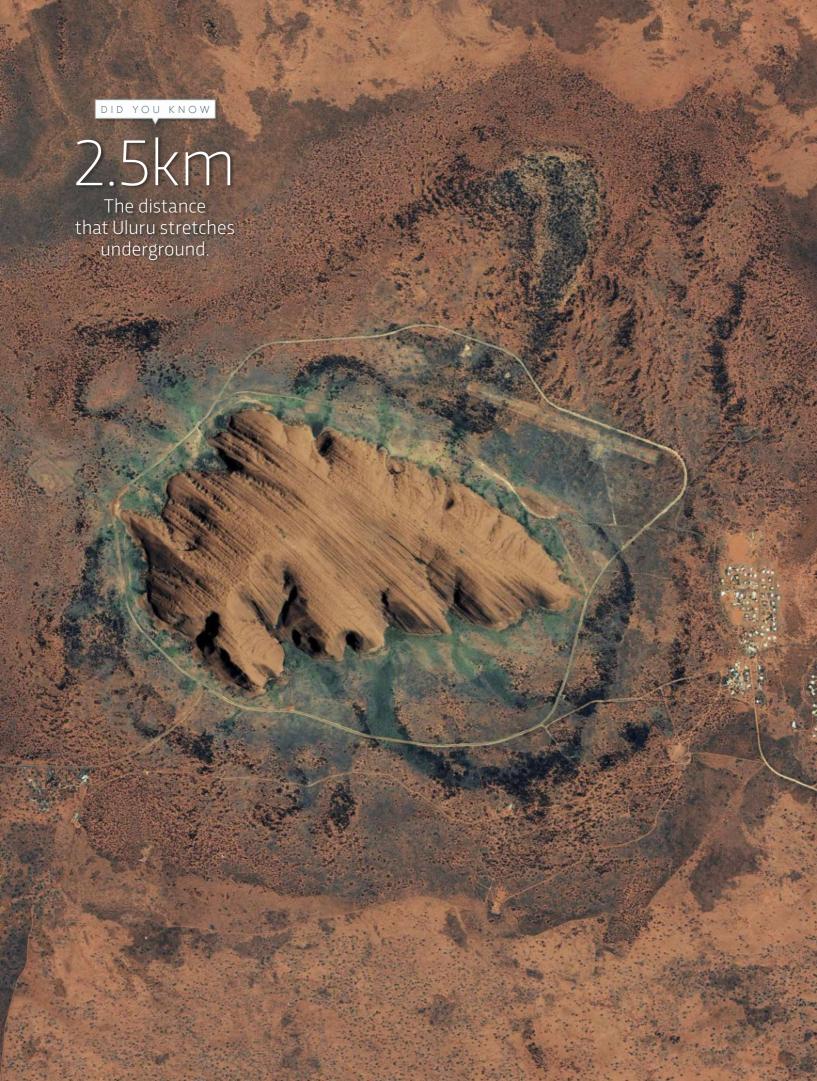
#### Sacred rock

Rising up from the arid Australian outback is Ayers Rock, or Uluru as it's known to the Aboriginal people. Climbing the rock is frowned upon due to its spiritual significance to the local Anangu. At 348m high and 3.6km long, it is claimed by many to be the largest rock in the world. At dawn and sunset, it appears to glow a deep shade of red.

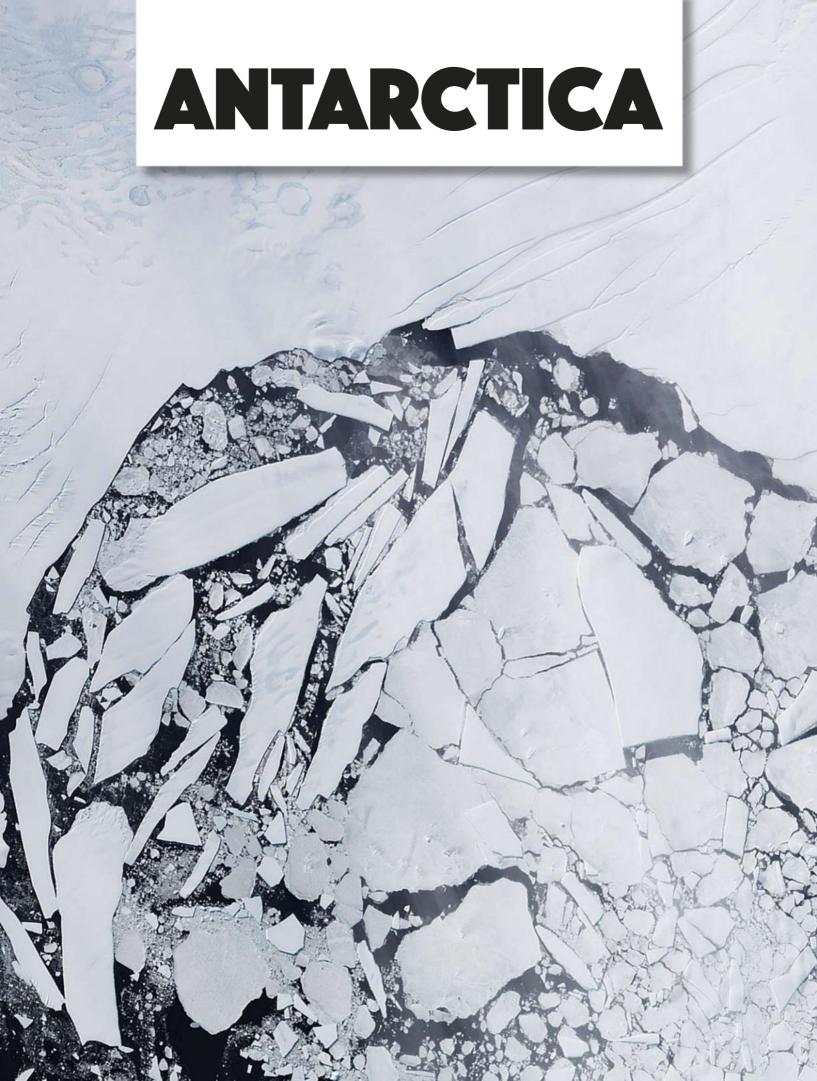




PHOTO: NASA











CANADA

# Ice fishing capital

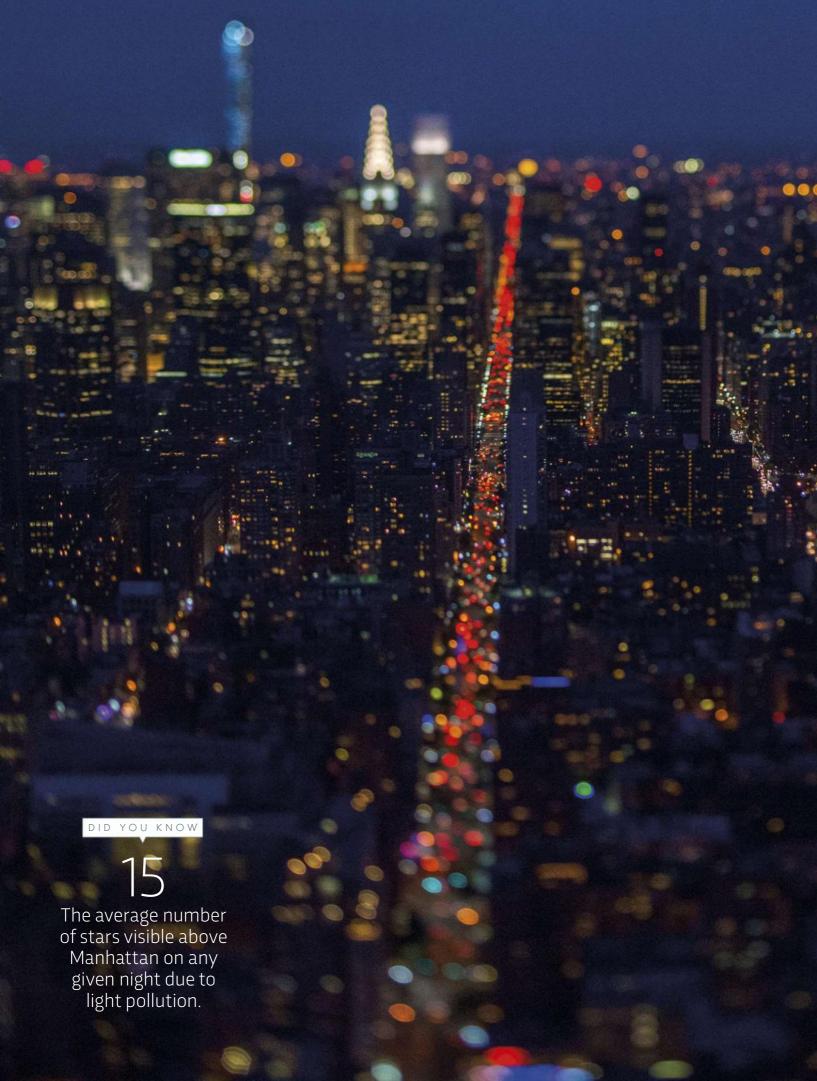
With 200km² of frozen surface for up to four months a year, it is easy to see why Lake Simcoe is considered the ice fishing capital of Canada. Left behind by melting glaciers, it once merged with some of the Great Lakes to form the vast Ice Age Lake Algonquin. There are over 25,000 lakes in the province of Ontario, holding roughly one-fifth of Earth's fresh surface water.

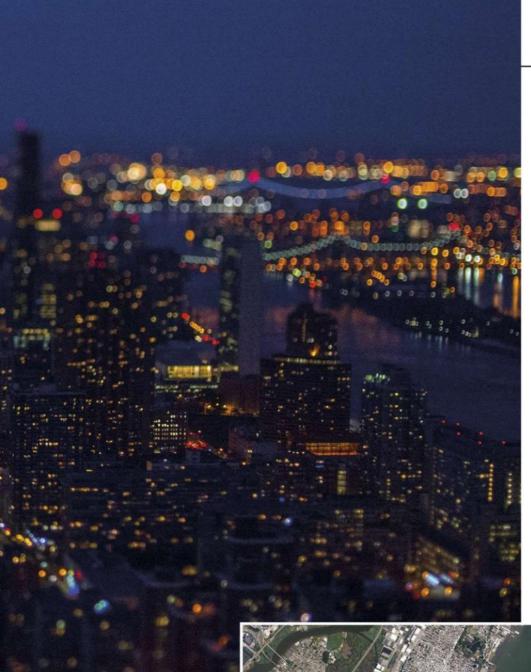










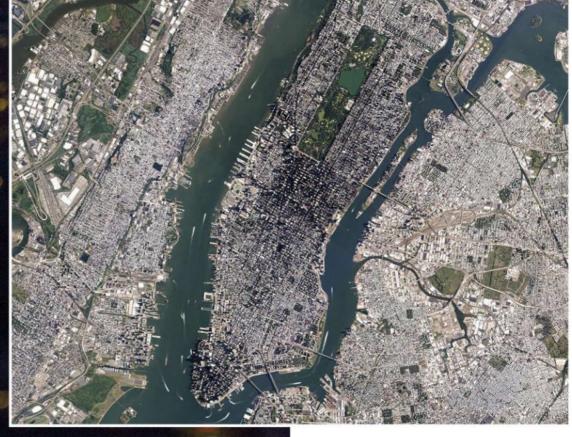


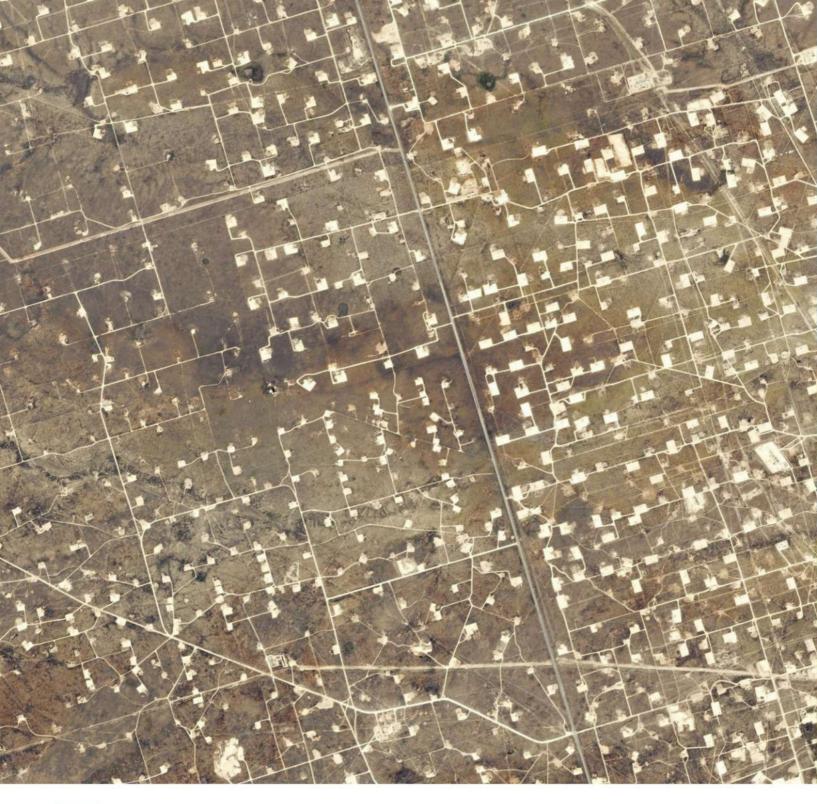
# The city that never sleeps

In the left-hand image of New York, Third Avenue slices through the bright lights of Manhattan, towards the Chrysler Building, glowing out of focus in the distance. In the image below, the darker shaded area to the south of Central Park is the Financial District. The scenes are very different from when the first Europeans arrived in the 1600s. At that time the area was inhabited by native Algonquian, Iroquois and Lenape tribes, who sold 'Mannahatta' to Dutch settlers for around \$1,000 in today's money.

PHOTO: GETTY, PLANET LABS INC







# Digging deep

Dusty lanes connect the oil well pads of Wasson Field in Texas. Improved drilling technologies, such as hydraulic fracturing (better known as fracking), have created a new fossil fuel boom in America, providing access to hard-to-reach natural gas and oil like that buried deep within western Texas' Permian Basin.

PHOTO: GETTY/DIGITAL GLOBE





# A hasty retreat

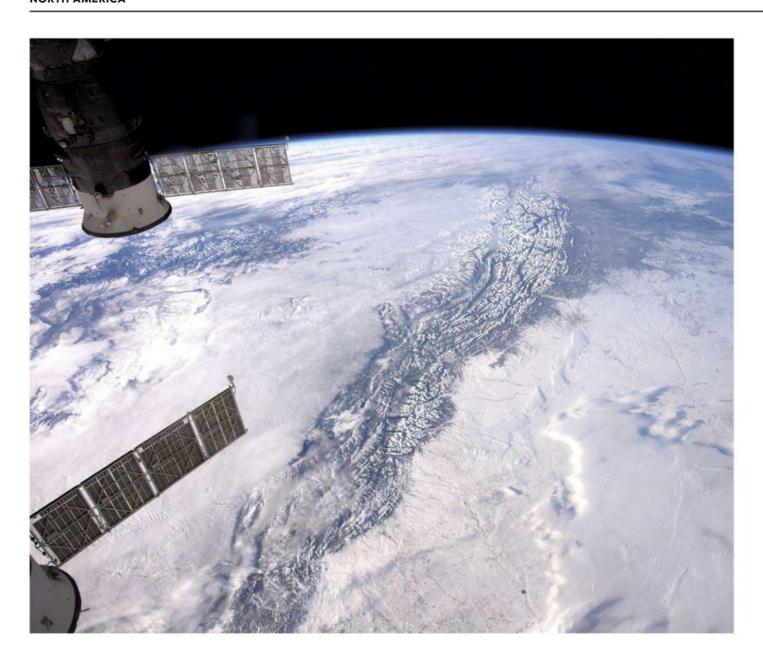
The Columbia Glacier in Alaska is known for moving quickly (flowing up to 10m per day), but is gaining a reputation for receding fast too. This false-colour satellite image was taken in 2016. In 1986, the edge of the glacier almost reached Heather Island (near the bottom of the image) – a difference of roughly 16km over a period of 30 years.

PHOTO: GETTY









#### Continental divide

The Rocky Mountains formed about 70 million years ago. Usually mountain ranges are created close to the coast, but geologists think that in this case the Pacific Plate 'subducted' at a shallow angle beneath the North American Plate, causing the Rockies to form further inland.

PHOTO:NASA

### Sin City suburbia

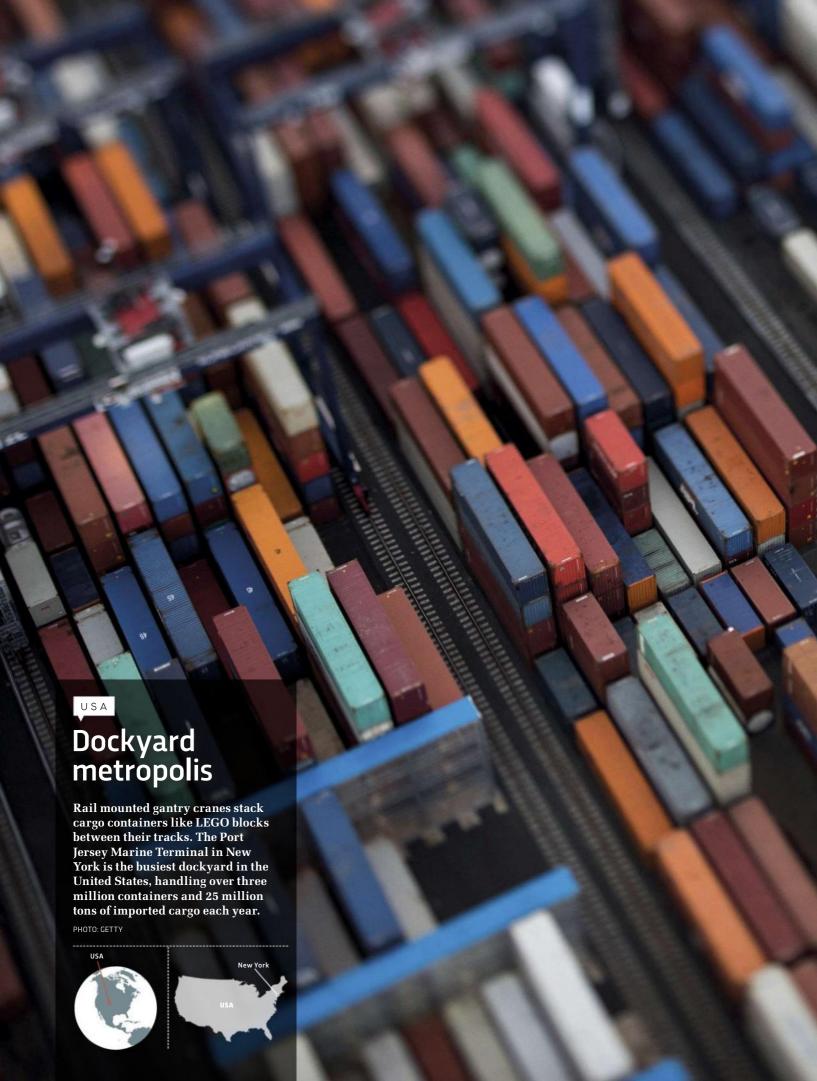
Arranged like flower beds, over 3,300 homes make up the Desert Shores Community in the shadow of the foothills of northwest Las Vegas. The city is not only the driest in the country, but also one of the highest consumers of water. The green strips at the bottom of the image are artificial lakes, while at the top is an irrigated golf course.

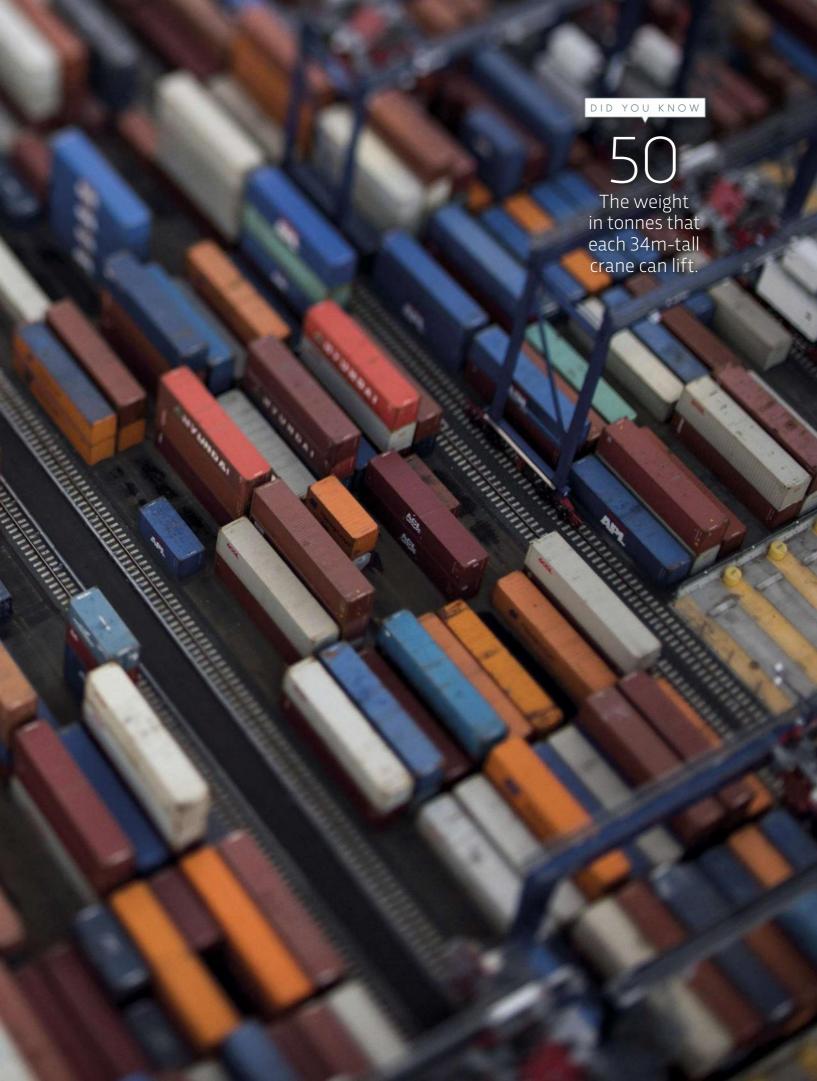
USA



PHOTO: GETTY/DIGITAL GLOBE







#### CANADA

#### Frozen wetlands

The shallow lakes and winding rivers of Canada's Old Crow Flats in Yukon, northwest Canada, provide a haven for wildlife – particularly the migrating herd of caribou on which the local Gwich'in natives depend. The wetlands are also a treasure trove of prehistoric fossils including mammoths, American lions, ground sloths and giant beavers. Altered mammoth bones dated to between 25-40,000 years may be Canada's oldest human artifacts.

PHOTO: PLANET LABS INC

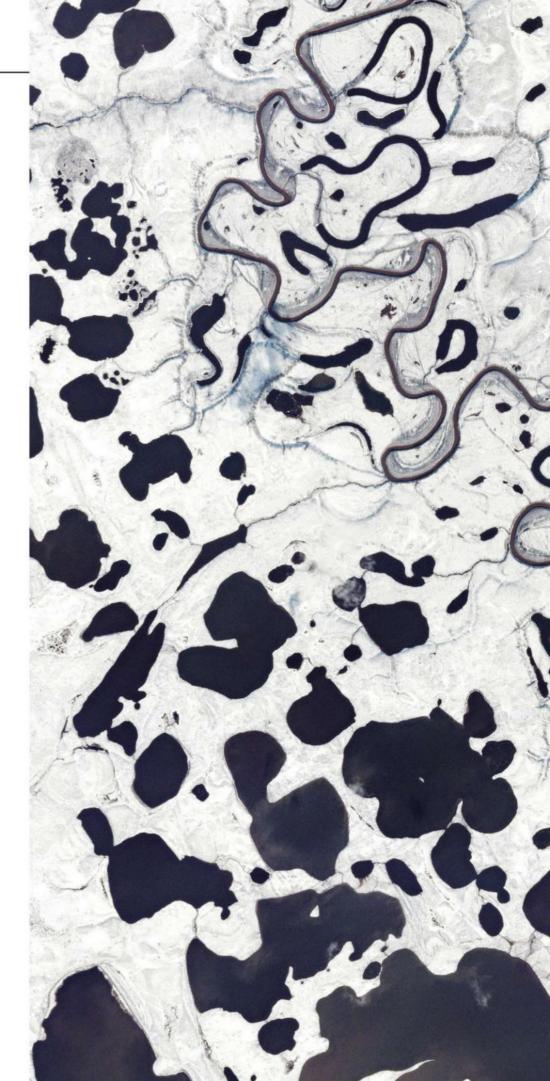


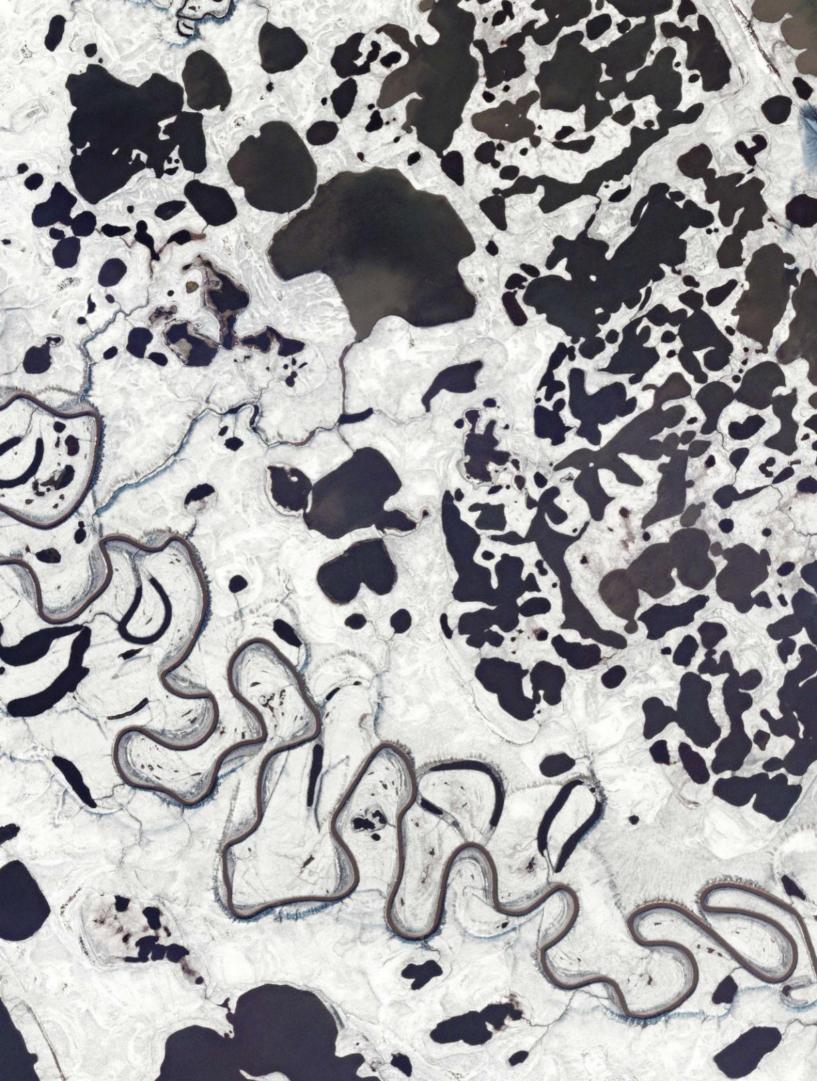
-63°C

The temperature of Canada's coldest ever day, recorded in Snag, Yukon, in 1947.







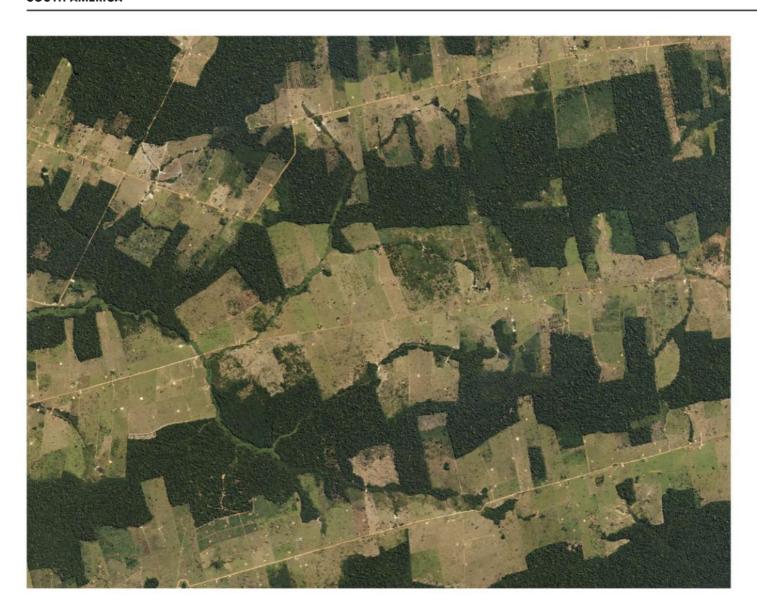












BRAZIL

#### Rainforest retreat

Part of Brazil's 'Arc of Deforestation', Rondonia has become one of the Amazon's most deforested areas. Over 25 per cent of its trees have been cleared since the 1970s to make way for cattle and soybeans. Yet without nutrients from the plant matter that lines the rainforest floor, the soil is only fertile for a few years.

PHOTO: PLANET LABS INC





BOLIVIA

## Mines in the sky

Gold and silver mines pepper the Andean Plateau (Altiplano). The bulk of it lies in Bolivia at an average altitude of 3,750m. Silver mining in the area began around 1,000CE, before the time of the Incas. The plateau's geological heritage has left it rich with precious minerals. The Andes started forming 6-10 million years ago when the Nazca Plate began 'subducting' beneath the South American Plate, forcing it upwards.













# Graphic enigmas

Created nearly 2,000 years ago, the meaning behind the Nazca Lines in the Ica region of Peru remains unknown. Made by removing the pebbles that covered the surface to expose the pale ground beneath, the lines form all sorts of shapes. There are about 900 'geoglyphs' from straight lines to triangles to spirals, and 70 'biomorphs' of birds and beasts, including a hummingbird, monkey and spider.

PHOTOS:GETTY/MARTIN BERNETTI







#### BRAZIL / PARAGUAY

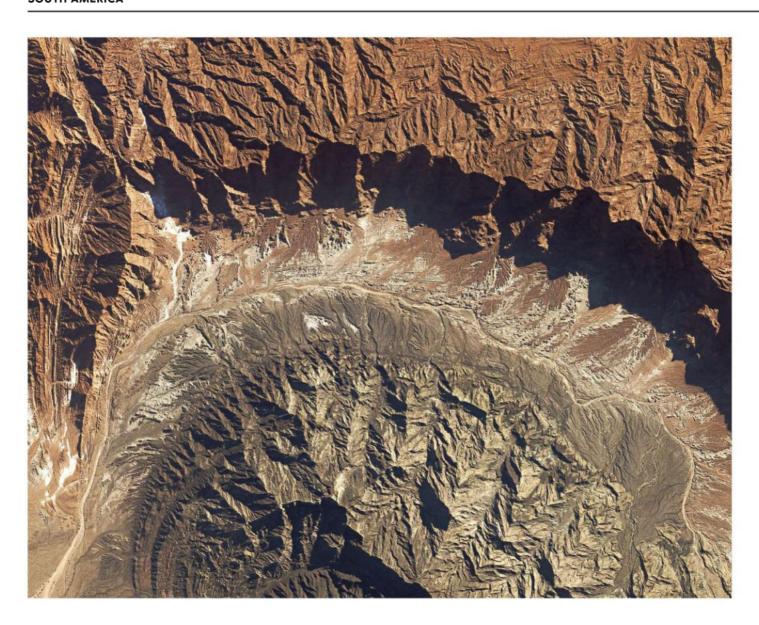
#### Greenbelts

Quilted fields protrude into the smooth waters of the Itaipu Reservoir, which runs along the border between Brazil and Paraguay. The warm, tropical climate makes the area ideal for growing sugar cane, coffee, tea and cotton. Agriculture covers over 50 per cent of the landscape, but thanks to reforestation efforts, a green strip of vegetation now lines the banks.









CHILE

# Martian landscape

Despite its name, the eroded hills of Valle de la Luna in Chile look more like the surface of Mars than the Moon. Located in the Atacama Desert, this region is regarded as one of the driest places on Earth – some years no rain falls at all. When experiments used by the Viking Mars rovers were duplicated here, some soil samples contained no signs of life.

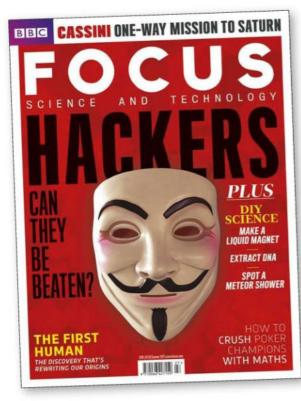






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